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Record of the Work of the Wilson Chapter,

FOR 1893 AND 1894.

ON THE MNIOTILTIDÆ.

21-8610 Oct 8

By Lynds Jones, *Chairman of Committee.*

The character of the greater portion of the notes handed me has made a change in the original plan of this report necessary. It seems advisable to make a report upon only such points as are pretty fully covered by every set of notes received, at this time, reserving all other material for another report when a sufficient mass of matter has been accumulated to make it of the most value.

For the sake of brevity and clearness this report is presented in tabular form as far as practicable. Since it attempts to show only the migrations, relative abundance and breeding range of each species, the conclusions to be drawn are left to the reader, a glance at the table being sufficient to show everything.

I strongly recommend this work, now scarcely begun, to continue several years, if necessary.

This report is based upon notes received from the following twenty-nine localities :

San Bernardino, Cala. . . . . Edward Wall.
Bexar, Co., (San Antonio), Texas. . . . . A. H. W. Norton.
Coffeyville, Kan. . . . . Geo. N. Upham.
Garden City, Kan. . . . . H. W. Menke.
Jackson Co., (Kansas City), Mo. . . . . John A. Bryant.
Salem, Iowa. . . . . David L. Savage.
Grinnell, Iowa. . . . . Lynds Jones.
Winnebago Co., (Rockford), Ill. J. E. Dickinson and F A. Gregory.
Milton, Wis. . . . . Floyd Coon.
Meridian, Wis. . . . . J. N. Clark.
Delavan, Wis. . . . . Ned. Hollister.
Mt. Sterling, Wis. . . . . H. P. Mitchell.
St. Paul, Minn. . . . . Walton Mitchell.
Palmer, Mich. . . . . O. B. Warren.
Hamilton Co., (Montgomery), O. . . . . J C. Galloway

Lorain Co., (Oberlin), O.....Lynds Jones.
Green Co., (Waynesburgh), Penn.....J. Warren Jacobs.
Berwyn, Penn.....Frank L. Burns.
Perrineville, N. J.....Chas. A. Ely.
Miller's Corners, N. Y.....Bert Bennett.
Cortland Co., (Cincinnatus), N. Y.....H. C. Higgins.
Gretna, N. Y.....Millard Van Wagner.
Oswego City, N. Y.....D. D. Stone.
Portland, Conn.....John H. Sage.
Wethersfield, Conn.....Henry R. Buck.
Belcherstown, Mass.....H. E. Barton.
Bangor, Me.....Ora W. Knight.
Phillips, Me.....E. L. Haley.
Toronto, Can.....,W. H. Mc.Nairn.

There are also a few notes from Starke, Fla., by Ned Hollister.

I am greatly indebted to Prof. Ludwig Kumlein, of Milton, Wis., for a list of the warblers of Wisconsin, particularly the south-central part His work covers a long period of years.

Mr. Henry R. Buck has kindly furnished me with a list of the warblers of Connecticut, with notes of their arrival gleaned from all sources.

Many members have handed me valuable notes bearing upon the breeding habits and eggs. I retain these as a nucleus for another later report.

In a few cases members have sent notes on the authority of some well known ornithologist without first consulting him. This should never be done, since it involves both yourself and your authority in a possible and often probable difficulty. Always make sure of your records before reporting them finally.

Abbreviations used in this report are:

T. V.=Transient Visitant or Migrant.

S. R.=Summer Resident.

L.=Last one seen.

Tol. Com.=Tolerably common,

Not Com,=Not common.

Dates in numerals, as 5-2-'90=May 2d, 1890. The first number indicates the month, the second the day of the month, the last the year.

Abbreviations of states and months are as usual.

Mniotilta varia (L.) BLACK AND WHITE WARBLER.

	T. V.	S. R.	1892.	1893.	GENERAL NOTES.
Starke, Fla.....	common				
Jackson Co., Mo...					reported
Garden City, Kan..			one 5		
Grinnell, Iowa.....	common	rare			firsts 4-16 to 5-9
Rockford, Ill.....	common	rare	5-1	5-4	
Hamilton Co., O...	common			4-27	
Oberlin, O.....	common	rare	5-8	5-8	4-28-94
Green Co., Pa.....		rare			
Berwyn, Pa.....	abundant	rare		4-30	
Pereineville, N. J..		common		6-1	
St. Paul, Minn....	common				
Mt. Sterling, Wis..	rare				
Delavan. Wis.....	common	rare			
Meridian, Wis.....		common			
Palmer, Mich.....		rare		5-6	
Miller's Cor's, N. Y.	not com.			5-12	
Cortland Co , N. Y.	common		5-4	5-7	
Gretna, N. Y.....	common	rare			5-29-'94
Oswego City, N. Y..	abundant	rare			
Portland, Conn....	common	not com.			
Bangor, Me.....		common			
Phillips, Me.....		not com.			
Toronto, Can.....		common		5-3	

At first glance this warbler may be mistaken for the nuthatches from its manner of feeding.

Protonotaria citrea (Bodd.) PROTONOTARY WARBLER.

Reports from Jackson Co., Mo. and Salem, Iowa, where it is not uncommon. In 1894 it arrived on May 10. Mr. Frank L. Burns reports a nest taken in Goodhue Co., Minn., June 13, 1893. There is little doubt that a sharper lookout will reveal this species in localities where it is not now supposed to be.

Helinaia swainsonii Aud. SWAINSON'S WARBLER.

Mr. Burns describes a set collected by Troup D. Perry, in Catham Co., Ga., on June 2, 1890.

Helmintherus vermivorus (Gmel.) WORM-EATING WARBLER.

	T. V.	S. R,	GENERAL NOTES.
Jackson Co., Mo...			Reported
Salem, Iowa.....		rare	5-6-'94
St. Paul, Minn.....			one 5-13-'93
Green Co., Pa.....		rare	
Berwyn, Pa,.....		not com.	5-8-'94
Portland, Conn....	rare		

Here is another bird which should have especial attention directed toward it. It should be found to be pretty generally distributed in suitable localities.

Helminthophila pinus (Linn.) BLUE-WINGED WARBLER.

	T. V.	S. R.	GENERAL NOTES.
Coffeyville, Kan....	common		
Jackson Co., Me...		common	
Salem, Iowa.....		common	5-5-'93 5-5-'94
Grinnell, Iowa.....	common	tol. com.	
St. Paul, Minn....	not com.		
Winnebago Co., Ill.	common	rare	5-17-'93 5-2-'90
Hamilton Co., O...	common	question	4-20-'91
Lorain Co.. O.....	common	few	5-15-'93 5-1-'94
Berwyn, Penn.....		common	
Portland, Conn....		rare	

Once learn the piercing, insect tone of this little fellow and you are sure to find it, during late April or early May, high up in the tree tops. But its nest must be sought for on the ground, near which, in the underbrush, it stays during the summer.

Helminthophila chrysoptera. GOLDEN-WINGED WARBLER.

	T. V.	S. R	GENERAL NOTES.
Winnebago Co., Ill.	not com.		5-8-'88 5-21-'93
Meridian, Wis.....	rare		
St. Paul, Minn....	common		
Lorain Co., O.....	rare		5-7-'94 first county record
Green Co., Penn...		rare	
Gretna, N. Y.....		few	5-1-'93 5-9-'94 young June 17
Portland, Conn....		not com.	
Toronto, Can.....			5-6-'93

A little persistent and careful work must certainly reveal this beautiful warbler to every member east of the plains. Look in the tree tops early in May.

Helminthophila leucobronchialis (Brewst.)

Portland, Conn., S. R., rare.

Helminthophila lawrencei (Herrick.)

Portland, Conn., very rare.

These two species belong in the "Hypothetical List," supposed to be hybrids between H. pinus and H. chrysoptera. The number of specimens grading each way, taken in Connecticut, seem to furnish material for doubting their authenticity.

Helminthophila ruficapilla (Wils.) NASHVILLE WARBLER.

	T. V.	S. R.	GENERAL NOTES.
Coffeyville, Kan....	common		
Jackson Co., Mo...	common		
Salem, Iowa.....	common		5-10-'94
Grinnell, Iowa.....	abundant		first week in 5 and middle of 9
Winnebago Co., Ill.	common		5-7-'93 5-2-'88 L. 5-30-'93
Meridian, Wis.....	common		
Milton, Wis.....	common		
St. Paul, Minn....			one taken 5-18 '91.
Lorain Co., O.....	abundant		5-8-'93 5-1-'94 L. 5-25-'94
Miller's Cor's, N. Y.	rare		5-7-'93
Oswego Co., N. Y..	abundant		
Portland, Conn....		common	
Wethersfield, Conn.		common	from May 26 to Sept. 21
Bangor, Me.....		common	
Phillips, Me.....		common	one nest

It is almost a wonder that any one can overlook this little fellow. His concealed chestnut crown cannot be seen any more readily than the ruby crown of the Ruby-crowned Kinglet, whom he somewhat resembles in his actions and manner of feeding. Look for them in the middle and lower stories of the woodland.

Helminthophila celata (Say.) ORANGE-CROWNED WARBLER.

	T. V.	GENERAL NOTES.
Jackson Co., Mo...		reported
Winnebago Co., Ill.		adult male Oct. 14, '93
Lorain Co., O.....	rare	one taken 5-11-'92
Berwyn, Penn.....		10-19-'91 first Chester Co. record; young
Meridian, Wis.....	rare	[female

Most of us have still to make its acquaintance! Prof. Ludwig Kumlein writes that it is "Some what earlier than the rest of the genus." "Procured specimens this year (1894) Apr. 26." "Rather rare." He is writing from southern Wisconsin.

Helminthophila celata lutescens (Ridgw.)

San Bernardino, Cala., S. R., common.

Helminthophila peregrina (Wils.) TENNESSEE WARBLER.

	T. V.	GENERAL NOTES.
Jackson Co., Mo...		reported
Grinnell, Iowa.....	abundant	
Winnebago Co., Ill.	common	5-16-'93 L. 9-9-'93
Meridian, Wis.....	common	
Delavan, Wis.....	tol. com.	
St. Paul, Minn....	abundant	few S. R. 5-5-'93 abundant to 5-15-'93
Lorain Co., O.....	common	5-8-'93 5-1-,94 L. 5 25-'94
Phillips, Me.....	reported	

Get acquainted with these small warblers and you are sure to find them. Look for this one during the first week in May in the lower branches of the trees and in the under-brush.

Compsothlypis americana (Linn.) PERULA WARBLER.

	T. V.	S. R.	GENERAL NOTES.
Starke, Fla.....	common		
Coffeyville, Kan...	common		
Jackson Co., Mo...			reported
Grinnell, Iowa.....	common	not com.	
Winnebago Co., Ill.		not com.	4-28-'88 5-10-'90
Meridian, Wis.....	rare		
St. Paul, Minn....		rare	

	T. V.	S. R	General Notes.
Lorain Co., O.....	common	rare	
Berwyn, Penn.....	abundant		arrives early May L. 11-1
Cortland Co., N. Y.	common	rare	5-13-'93 5-4-'92
Oswego City, N. Y.	abundant	few	
Portland, Conn....	abundant	rare	
Bangor. Me.....		common	

I did not find it in Lorain Co., in either 1893 or 1894, nor during either summer. At Grinnell, Iowa, it was common during the migration, arriving late in April or early in May. I have always found them well up in the trees. Prof. Kumlein says of it in Wisconsin: "Not common. A few breed in suitable localities in the southern tier of counties."

Dendroica tigrina (Gmel.) Cape May Warbler.

	T. V.	General Notes.
Grinnell, Iowa.....	tol. com.	
Winnebago Co., Ill.	rare	one male 5-16-17-1890
Meridian, Wis.....	few	
Milton, Wis.....	common	
Lorain Co., O.....	rare	
Cortland Co., N. Y.	rare	
Oswego City, N. Y.		5-26-'92 first record
Portland, Conn....	occasional	
Phillips, Me.....	not com.	

Prof. Kumlein says it is very irregular in Wisconsin, some years being even abundant, and others just the reverse. At Grinnell, Iowa, I never found them really common, but some were seen every year, always in the lower branches of the trees, during the first or second week in May.

Dendroica æstiva (Gmel.) Yellow Warbler.

	S. R.	1893.	General Notes.
San Bernardino, Cal	common		
Bexar Co., Texas..	common		
Coffeyville, Kan....	common		
Garden City, Kan..	common		
Jackson Co., Mo...	common		
Salem, Iowa.....	common		4-29-'94
Grinnell, Iowa.....	abundant		firsts from Apr. 27 to May 3

	S. R.	1893.	General Notes.	
Winnebago Co., Ill.	common	5-12		
Meridian, Wis.	not com.			
Milton, Wis.	common			
Mt. Sterling, Wis.	abundant			
Delavan, Wis.	not com.			
St. Paul, Minn.	abundant		4-26-'92	
Hamilton Co., O.	abundant	4-25	4-20-'91	4-23-'90
Lorain Co., O.	abundant	5-1	4-25-'94	4-25-'92
Green Co., Pa.	common			
Berwyn, Pa.	not com.			
Perrineville, N. J.	common	5-1		
Gretna, N. Y.	abundant		5-1-'94	
Miller's Cor's, N. Y.	common	5-3		
Cortland Co., N. Y.	common	4-28	5-2-'90	4-27-'89
Oswego City, N. Y.	common			
Portland, Conn.	common			
Wethersfield, Conn.	common			
Bangor, Me.	abundant			
Phillips, Me.	not com.			
Toronto, Can.	very com.			

The universal distribution and general abundance of this bird would make it a very profitable subject for special study.

Dendroica cærulescens. Black-throated Blue Warbler.

	T. V.	1893.	General Notes.
Garden City, Kan.	rare		10-17-'91 first state record
Jackson Co., Mo.			reported
Grinnell, Iowa.	rare		
Winnebago Co., Ill.	common	5-9	9-3 to 10-8-'93
Milton, Wis.	rare		
Meridian, Wis.	rare		
Hamilton Co., O.	common		
Lorain Co., O.	common	5-15	5-1-94
Berwyn, Pa.	common	5-11	L. 9-11-'93
Miller's Cor's, N. Y.	common	5-7	
Cortland Co., N. Y.	common		seen 9-12-'93
Gretna, N. Y.	rare	5-13	
Oswego Co., N. Y.	abundant		

	T. V.	1893.	General Notes.
Portland, Conn....	common		
Belcherstown, Mass.			seen 5-10-'83
Phillips, Me.....	common		

A bird of the lowest branches and underbrush, often feeding upon the ground. At once recognized by the white spot at the base of the wing quills. Prof. Kumlein finds it a common migrant in Wisconsin : "apparently less common than 20 or 30 years ago."

Dendroica coronata (Linn.) Yellow-rumped Warbler.

	T. V.	S. R	1893.	General Notes.
Starke, Fla.....	tol. com.			
Coffeyville, Kan....	common			
Garden City, Kan..	common		4-21	
Jackson Co., Mo...	common			
Grinnell, Iowa.....	abundant			one pair known to breed
St. Paul, Minn.....	abundant			
Winnebago Co., Ill.	abundant		4-12	L. 5-12-'93
Delavan, Wis.....	common			
Milton, Wis.....	common		4-19	
Meridian, Wis.....	abundant			
Palmer, Mich.....	common		4-30	9-17 to 10-17-'93
Hamilton Co., O...	abundant			4-29-'91 10-3 to 10-25-'91
Lorain Co., O.....	common		5-10	4-12-'94 L. 5-12-'94
Berwyn, Pa.....	common		4-12	9-1 to 10-30-'92
Cortland Co., N. Y.	abundant		5.5	'92 record : males 5-2 ; L. males ; F. females 5-18; L. female 5-24.
Oswego City, N. Y.	abundant			
Portland, Conn....	common			
Wethersfield, Conn.	common			
Duxbury, Mass....	common			remained all winter and fed on grass seeds
Belcherstown, Mass.	common	rare		one pair bred
Bangor, Me.....	common	common		
Phillips, Me.....	common	common		
Toronto, Can.....		not com.		

Usually very common in Lorain Co., O. ; I did not see a dozen birds during the spring of 1893. This bird is worthy of special study. He is the earliest of the warblers.

Dendroica auduboni (Towns). AUDUBON'S WARBLER.

Garden City, Kan.. common T. V., 4-21-'93
San Bernardino, Cala., common T. V.

Dendroica maculosa (Gmel.) MAGNOLIA WARBLER.

	T. V.	S. R.	1893.	GENERAL NOTES.
Jackson Co., Mo...	common			
Grinnell, Iowa.....	common			
Winnebago Co., Ill.	abundant		5-9	L. 5-20-'93 8-28 to 9-27-'93
Delavan, Wis.....	common			
Meridian, Wis.....	common			
Palmer, Mich.....	common		5-27	
Hamilton Co., O...				one 5-9-'92
Lorain Co., O.....	common			4-28-'94 L. 5-17-'94
Berwyn, Pa.....	abundant		5-11	never in perfect plumage 8-30 to 10-21-'93
Miller's Cor's N. Y..	common		5-18	
Cortland Co., N. Y.	common	rare	5-20	
Gretna, N. Y.....	abundant		5-13	
Oswego City, N. Y.	common	few		
Portland, Conn....	common			
Wethersfield, Conn.	common		5-26	
Bangor, Me.....	rare			
Phillips, Me.....		abundant		

Prof. Kumlein says: "Of all the warblers this species has surely and steadily diminished in numbers the last 25 years." Look for it in the lower branches of the trees.

Dendroica cærulea (Wils.) CERULEAN WARBLER.

	T. V.	S. R.	GENERAL NOTES.
Jackson Co., Mo....			reported
Grinnell, Iowa.....	rare		
Winnebago Co, Ill.		rare	1 male 5-15-'92 2 males 4-
Hamilton Co., O...		rare	5-9-'91 [28-'88
Lorain Co., O.....	common	few	5-15-'93 5-7-'94
Berwyn, Pa.....	rare		young male 10-27-'89
Cortland Co.. N. Y.	rare		
Bangor, Me.....	rare		

Prof. Kumlein says: "Very rare. I have never taken it but once (May 14, 1870, male), my father once, and Dr. Hoy but once or twice." I have found it in considerable numbers for two years in swampy woods, and heard males singing in several timber lots all summer.

Dendroica pennsylvanica (Linn.) CHESTNUT-SIDED WARBLER.

	T. V.	S. R.	1893.	GENERAL NOTES.
Grinnell, Iowa.....	common			record of one nest
Winnebago Co., Ill.	common	rare	5-9	L. 9-3-'93
Delavan, Wis.....	common			
Milton, Wis.....		common		
Meridian, Wis.....	irregular			
Palmer, Mich.....		abundant	6-4	
Lorain Co., O.....	common			4 28-'94 L. 5-14-'94
Berwyn, Pa.....	abundant		5-8	8-13 to 10-8-'93
Miller's Cor's N. Y.		common		
Cortland Co., N. Y.		common	5-10	5-9-'92
Gretna, N. Y.....		common	5-13	5-13-'94
Oswego City, N. Y..		common		
Portland, Conn....		common		5-10-'94
Belcherstown, Mass.		common		
Bangor, Me.....		common		
Phillips, Me.....		abundant		
Toronto, Can.....		common	5-26	

Prof. Kumlein says that it is a common breeder and is very plenty during autumnal migrations, in Wisconsin. It seems probable that this species may be found nesting in many localities where it is now regarded as a migrant.

Dendroica castanea (Wils.) BAY-BREASTED WARBLER.

	T. V.	GENERAL NOTES.
Grinnell, Iowa.....	rare	
Winnebago Co., Ill.	rare	5-3-'87 5-18-'89 L. 5-30-'85
Meridian, Wis.....	few	5-3-'93
Lorain Co., O.....	common	4-28-'94 L. 5-14-'94
Berwyn, Pa.....	not com.	5-20-'93 9-15-'91
Oswego City, N. Y..	common	
Portland, Conn....occasional		

Prof. Kumlein thinks this species breeds in Wisconsin. He says:

"Common, especially in autumn. Some years the young are very common during the first 10 days of September." This species is so generally distributed that it must certainly occur at every station in its range. A little more careful and extended search will reveal it.

Dendroica striata (Forst.) BLACK-POLL WARBLER.

	T. V.	1893.	GENERAL NOTES.
Garden City, Kan.	common		
Jackson Co., Mo.	common		
Salem, Iowa	common		
Grinnell, Iowa	abundant		
St. Paul, Minn.		5-13	one taken
Winnebago Co., Ill.	not com.	5-30	9-9-'93 . 5-17-'88
Milton, Wis.	common		
Meridian, Wis.	common		
Lorain Co., O.	common	5-23	one female
Berwyn, Pa.	rare		young male 10-8-'91
Cortland Co., N. Y.	rare	5-25	L. 5-27-'93
Gretna, N. Y.	abundant		
Oswego City, N. Y.	abundant		
Portland, Conn.	common		
Phillips, Me.			two nests in 1891

It thus appears that this species is somewhat restricted locally. Prof. Kumlein reports it as "very common in spring. A few undoubtedly nest in the state. Less plenty in September." Mr. David L. Savage has sent me the skin of a female taken May 20, 1894, with its nest and eggs, in Dallas Co., Iowa, by Fred Hamlin. This is the first state record of a nest.

Dendroica blackburniæ (Gmel.) BLACKBURNIAN WARBLER.

	T. V.	1893.	GENERAL NOTES.
Grinnell, Iowa	tol. com.		
Winnebago Co., Ill.	tol. com,	5-16	
Milton, Wis.	common		
Meridian, Wis.	few		
Palmer, Mich.		5-27	
Lorain Co., O.	common	5-11	5-2-'94 L. 5-12-'94
Berwyn, Pa.	common	5-20	L. 10-19
Miller's Cor's, N. Y.	common	5-12	
Cortland Co., N. Y.	common	5-14	L. 5-19-'93 10-12-'93 5-18-'92

	T. V.	1893.	General Notes.
Oswego City, N. Y.	abundant		
Portland. Conn.	not com.		
Belcherstown, Mass.	common		more common than usual
Bangor, Me.	rare		
Phillips, Me.	rare		
Toronto, Can.	abundant		

Prof. Kumlein writes: "Quite common as a migrant. A few breed as far south as Jefferson (heavy woods)." The striking color of this warbler should make it a conspicuous object readily noticed.

Dendroica nigrescens. Black-throated Gray Warbler.

San Bernardino, Cal., S. R., rare.

Dendroica chrysoparia Sel. & Salv. Golden-cheeked Warbler.

Bexar Co., Texas, rare.

Dendroica virens. Black-throated Green Warbler.

	T. V.	S. R.	1893.	General Notes.
Jackson Co., Mo.	common			
Grinnell, Iowa.	common			
Winnebago Co., Ill.	common		5-17	4-23-'88 8-27-'93 10-28-'87
Milton, Wis.	common			
Meridian, Wis.	rare			
Palmer, Mich.		common	6-4	
Lorain Co., O.	common		5-10	5-7-'94 L. 5-25-'94
Berwyn, Pa.	abundant			9-1 to 10-9-'93 never seen in spring
Cortland Co., N. Y.	common		5-10	10-12 to 10-20-'93
Gretna, N. Y.	common			5-13-'94
Oswego City, N. Y.	abundant			
Portland, Conn.		rare		
Belcherstown, Mass.	common		5-10	
Phillips, Me.		rare		
Toronto, Can.			5-28	

In Wisconsin: "Fairly common migrant. Know of one instance of their breeding in Jefferson Co. Not as common as formerly." (L. Kumlein.) The first arrivals in spring are in high plumage, in Lorain Co., O.

Dendroica kirtlandi (Baird.) KIRTLAND'S WARBLER.

Winnebago Co., Ill., May 25, 1894. First local, second state record. For first record see *Auk*, July, 1894, p. 558.

Dendroica vigorsii (Aud.) PINE WARBLER.

	T. V.	GENERAL NOTES.
Starke, Fla	abundant	"Fairly common summer resident in
Milton, Wis	not com.	the pine regions of Wisconsin. More
Meridian, Wis	rare	common along the lake shore (Michi-
Lorain Co., O	rare	gan) than in the interior. Rare migrant
Oswego City, N. Y.	rare	in the oak regions." (L. Kumlein.)
Portland, Conn	not com.	Who will be the first to give us dates
Bangor, Me	common	for the migrations?

Dendroica palmarum (Gmel.) PALM WARBLER.

	T. V.	GENERAL NOTES.
Jackson Co., Mo	common	
Grinnell, Iowa	common	
Winnebago Co., Ill.	common	5-6-'93 L. 5-10-'93 4-26-'88 5-9-'90 9-12 to 10-12-'93
Milton, Wis	rare	
Meridian, Wis	abundant	
Delavan, Wis	tol. com.	
Lorain Co., O	common	4-30-'94 L. 5-7-'94
Hamilton Co., O	abundant	5-2-'93
Oswego City, N. Y.		one male 1878

"Common migrant. First March 6, 1894." (L. Kumlein.) It is surprising that this early warbler is not more generally known. Rare in Lorain Co., 1893.

Dendroica palmarum hypochrysea. YELLOW PALM WARBLER.

	T. V.	GENERAL NOTES.
Starke, Fla	tol. com.	
Portland, Conn	not com.	
Belcherstown, Mass.	abundant	
Bangor, Me	abundant	rare S. R.
Toronto, Can	common	Apr. 23, 1893
Lorain Co., O		one male taken by G. D. Wilder, 4-10-'91

This and the preceeding species are of similar habits, and both are early spring arrivals, usually appearing in April.

Dendroica discolor (Vieill.) PRAIRIE WARBLER.

Lorain Co., O., one taken May 7, 1892.
Perrineville, N. J., common S. R.
Portland, Conn., not common S. R.

We should keep a sharp lookout for this species. It seems to be very little known.

Seiurus aurocapillus (Linn.) OVEN-BIRD.

	S. R.	1893.	GENERAL NOTES.
Garden City, Kan.			not common T. V.
Jackson Co., Mo.	common		
Salem, Iowa	common	5-5	4-29-'94
Grinnell, Iowa	common		
Winnebago Co., Ill.	common	5-4	L. 9-24-'93
Meridian, Wis.	common		
Delavan, Wis.	common		
St. Paul, Minn.	common		
Hamilton Co., O.	common		
Lorain Co., O.	abundant	5-13	5-2-'94
Green Co., Pa.	common		
Berwyn, Pa.	abundant	4-13	L. 9-21-'93
Perrineville, N. J.	abundant	5-1	L. 10-1-'93
Miller's Cor's, N. Y.	common		
Cortland Co., N. Y.	common	5-9	L. 10-20-'93
Gretna, N. Y.	common	5-1	5-6-'94
Oswego City, N. Y.	abundant		
Portland, Conn.	common		
Wethersfield, Conn.	common	5-26	
Phillips, Me.	common		
Toronto, Can.	common		

Another good subject for special study. One that always heralds his arrivals in a well known key. We all must find him if we go into the woods.

Seiurus noveboracensis (Gmel.) WATER-THRUSH.

	T. V.	GENERAL NOTES.
Jackson Co., Mo...		reported
Salem, Iowa.....		4-15-'94
Grinnell, Iowa.....	rare	one record
Winnebago Co., Ill.	common	5-7-'89 4-26-'92 9-12 to 9-20-'93
St. Paul, Minn.....		S. R. common
Hamilton Co., O...	few	Prof. Kumlein writes from Wisconsin:
Lorain Co., O.....	rare	"Very common T. V. I am very sure
Portland, Conn....	common	they nest in the state sometimes as far

south as Manitonoc."

Seiurus motacilla (Vieill.) LOUSIANA WATER THRUSH.

	T. V.	GENERAL NOTES.
Salem, Iowa.....	very rare	I suspect that some have confused this
Grinnell, Iowa.....	rare	with the two preceeding species. "Very
Meridian, Wis.....	common	rare. One May 13, 1893, male. (L.
Hamilton Co., O...	rare	4-15-'94 [Kumlein.)
Lorain Co., O.....	common	5-8-'93 4-21-'94
Green Co., Pa.....	common	
Oswego City, N. Y..	abundant	
Portland, Conn....	not com.	

Geothlypis formosa (Wils.) KENTUCKY WARBLER.

Salem, Iowa, S. R. not common.
Hamilton Co., O., S. R. 5-2-'92 4-28-'93.
Lorain Co., O., rare. I have never seen it.
Green Co., Pa., S. R. common.
Berwyn, Pa., S. R. common.

"Very rare in Wisconsin." (L. Kumlein.)

Geothlypis agilis (Wils.) CONNECTICUT WARBLER.

Milton, Wis., T. V. rare.
Hamilton Co., O., one male 5-16-93.
Berwyn, Pa., T. V. rare. Female 9-19-'93.
Portland, Conn., T. V. rare.

"Of regular occurence spring and fall. The very last arrival in spring. June 1 is the regular date to look for them. Found nesting once in Jefferson Co." (L. Kumlein.) It frequents tangled undergrowth.

Geothlypis philadelphia (Wils.) MOURNING WARBLER.

Milton, Wis., T. V. rare.
Meridian, Wis., T. V. rare.
Lorain Co., O., male May 23, 1894. First Lorain Co., record.
Cortland Co , N. Y., T. V. rare.
Oswego City, N. Y., T. V. rare.
Portland, Conn., T. V. rare.

"Frequents same localities as preceeding, but less common. One of our rarest warblers." (L. Kumlein.)

Geothlypis macgillivrayi (Aud.) MACGILLIVRAY'S WARBLER.

San Bernardino Co., Cala., T. V. *rare.*

Mr. W. L. Dawson has taken eggs in Washington State.

Geothlypis trichas (Linn.) MARYLAND YELLOW-THROAT.

	S. R.	1893.	GENERAL NOTES.
Winnebago Co., Ill.	common	5-27	5-3-'88
Meridian, Wis.	common		
Delavan, Wis.	common		
Palmer, Mich.	common	6-4	
Hamilton Co., O.	common		4-28-'91-2
Lorain Co., O.	common	5-8	5-1-'94 remains well into Sept.
Green Co., Pa.	common		
Berwyn, Pa.,	common	4-21	L. 9-18-'93
Cortland Co., N. Y.	common	5-9	
Gretna, N. Y.	common	5-3	5-7-'94
Oswego City, N. Y.	common		
Portland, Conn.	common		
Wethersfield, Conn.	common	5-11	
Belcherstown, Mass.	common		more numerous than usual 1893
Bangor, Me.	abundant		
Phillips, Me.	abundant		

"Most abundant (in Wisconsin) last of August and first days of September among the *phragmites* and such like reeds along the lake shores." (L. Kumlein.)

Geothlypis brichas occidentalis. WESTERN YELLOW-THROAT.

	S. R.	GENERAL NOTES.
San Bernardino, Cal.	common	rare resident
Garden City, Kan...	rare	
Jackson Co., Mo...	common	
Salem, Iowa.....	common	5-6-'92 5-5-'93 4-30-'94
Grinnell, Iowa.....	common	4 25-'85 5-3-'86 4-30-'87 5-3-'88 5-5-'89 4-22-'90 departs late Sept.
St. Paul, Minn.....	common	

I have detected no difference in song or habits between this and the preceeding species. The two would be an excellent special study. They are preeminently birds of swampy regions, and lowly in habits.

Icteria virens (Linn.) YELLOW-BREASTED CHAT.

	S. R.	GENERAL NOTES.
Coffeyville, Kan....	common	
Garden City, Kan..	common	
Jackson Co., Mo....	common	
Salem, Iowa.....	common	5-6-'94
Grinnell, Iowa.....	common	common in brush skirting woods
Winnebago Co., Ill.	common	5-1-'91 5-30-'93 L. 7-7-'93
St. Paul, Minn.....	common	
Hamilton Co., O...	common	4-18-'89 4-30-'90 4-20-'91 4-28-'92 4-29-'93
Lorain Co., O.....	rare	5-8-'94 only one pair seen
Green Co., Pa.....	abundant	
Berwyn, Pa.....	common	
Cortland Co , N. Y.	rare	
Gretna, N. Y.....	common	
Portland, Conn....	common	

"S. R. rare. Of regular occurance in suitable localities." (L. Kumlein, Milton, Wis.) Its secretive habits have doubtlessly baffled many observers. Of bright colors and loud voice.

Icteria virens longicauda (Lawr.) LONG-TAILED CHAT.

San Bernardino, Cala., S. R. common.

I have eggs taken in eastern Navada in 1891.

Sylvania mitrata (Gmel.) HOODED WARBLER.

Starke, Fla., one specimen taken.
Winnebago Co., Ill., one male 9-19-'87.
Green Co., Pa., S. R. rare. One nest 6-6-'91. 5 eggs.
Oswego City, N. Y., S. R. common.

There is an unauthentic record for Grinnell, Iowa, and one for Lorain Co., O. "Not uncommon along Lake Michigan as a migrant, less common in the interior" (of Wisconsin). (L. Kumlein.)

Sylvania pusilla (Wils.) WILSON'S WARBLER.

Garden City, Kan., one taken in spring of 1891.
Jackson Co., Mo., T. V.
Grinnell, Iowa. T. V. common. Often abundant in Sept.
Winnebago Co., Ill., T. V. tol. com. 5-7-'87 5-16-'93 L. 5-28-'93
Meridian, Wis., T. V. not common.
Lorain Co., O., T. V. rare. One taken 5-21-'91 by G. D. Wilder.
Oswego City, N. Y., T. V. rare.
Portland, Conn., T. V. common.

"Not uncommon as a migrant. Undoubtedly breeds in Wisconsin." (L. Kumlein.) More of us should be acquainted with this interesting little fellow.

Sylvania pusilla pileolata (Pall.) PILEOLATED WARBLER.

San Bernardino, Cala., S. R. rare.

Sylvania canadensis (Linn.) CANADIAN WARBLER.

	T. V.	GENERAL NOTES.
Winnebago Co., Ill.	tol. com.	5-9-'93 L. 5-30-'93 8-27 to 10-17-'93
Milton, Wis.	common	only in fall
Meridian, Wis.	common	
Lorain Co., O.	rare	two specimens taken in 1894
Berwyn, Pa.	abundant	8-13 to 8-31-'93 none others ever found
Cortland Co., N. Y.		5-20-'93 one specimen taken.
Oswego City, N. N.		common S. R.
Portland, Conn.	common	
Bangor, Me.	rare	

"Fairly common. Probably breeds in Wisconsin." (L. Kumlein.) Evidently this species needs more study!

Setophaga ruticilla (Linn.) AMERICAN REDSTART.

	S. R.	1893.	GENERAL NOTES.
Jackson Co., Mo...	common		
Salem, Iowa.....	common	5-12	5-10-'94
Grinnell, Iowa.....	common		
Winnebago Co., Ill.	rare.	5-9	T. V. common L. 10-8-'93 4-27-'88
Milton, Wis.....	common		
Meridian, Wis.....	common		
Delavan, Wis.....	common		
St. Paul, Minn.....	common		
Palmer, Mich.....	common	5-27	L. 9-9-'93
Hamilton Co., O...	common	5 6	4-14-'90 5-3-'91-2
Lorain Co., O.....	common	5-8	5-2-'94
Green Co., Pa.....	abundant		
Berwyn, Pa.....		5-10	abundant T. V. 9-5 to 9-29-'93
Perrineville, N. J..	abundant	5-1	
Miller's Cor's, N. Y.	common	5-12	
Cortland Co., N. Y.	common		
Gretna, N. Y.....	common	5-13	5-4-'94
Oswego City, N. Y.	abundant		
Portland, Conn....	common		
Wethersfield, Conn.	common		
Bangor, Me.....	abundant		
Phillips, Me.....	abundant		
Toronto, Can.....	not rare		

Another species for special work. Its general distribution would certainly afford some interesting comparisons.

In the preceeding report the capture of Dendroica eærulesceus (Gmel.) at Garden City, Kansas, by Mr. H. W. Menke, is the first one for Kansas. Prof. W. W. Cook speaks of it as a Kansas bird in his "Migration in the Mississippi Valley," but no record of an actual capture is given.

The specimen of Dendroica kirtlandi (Baird.) taken by Mr. J. E. Dickinson, in Winnebago Co., Ill., is the second one taken in the state. The other having been taken by Mr. B. T. Gault, at Glen Ellyn, on May 7, 1894. (Reference has already been given.)

The record of Helminthophila celata (Say.) by Mr. Frank L. Burns, at Berwyn, Pa., is the first one for Chester Co.; and those of Helminthophila chrysoptera (L.) and Geothlypis philadelphia (Wils.) taken by

the writer, are the first for Lorain Co., Ohio. That of Dendroica tigrina (Gmel.) by D. D. Stone, is the first for Oswego City, N. Y. ; and the nest of Dendroica striata (Forst.) in Dallas Co., Iowa, by Fred Hamlin, reported by David L. Savage, is the first for the state.

A more extended study of this group will add greatly to our knowledge of its range and habits. The progress already made is highly gratifying and full of promise.

In response to the special bulletin issued in November last, a number of members very generously subscribed money for the publication of this bulletin and another, to appear soon on the Crow. But we need a few more dollars for postage and binding. All contributions will be promptly acknowledged.

So much interest has been shown in the work of the Chapter by a number of members of late, as to give much encouragement.

I have appointed Mr. Lynds Jones as general chairman of all the committees on special investigations, with power to arrange committees for the special branches of work. In the next bulletin there will be more definite announcements concerning this.

We have exchanged a number of back numbers of the Chapter publications with F. H. Lattin, of Albion, N. Y., for the following books :

Ridgway's Manual of N. A. Birds, list price,	$7 50
Jordan's Manual of Vertebrates, list price,	2 50
Hornaday's Taxidermy,	3 00
Apgar's Key to Birds,	50
Birds of Greenland,	1 00
Birds of Labrador	1 00

The copy of Ridgway's Manual is somewhat shelf-worn, otherwise the books are perfectly new. Bids for the lot or for separate books should be sent to Mr. Lynds Jones, Oberlin, O., before February 10th.

The report of elections appears on another page.

Extra copies of this Bulletin 15 cents each.

REUBEN M. STRONG, *President.*

The experience of the work which the Chapter has done in years past, has taught us that one year is too short a time in which to make any thing like a careful study of even a single species, much less a group of species. Hence it is proposed that a continuous system of study be inaugurated.

Having selected a group for study, the Warblers, it is proposed for 1895 to 1899, to divide the topics for study between several competent members, giving to one *food*, to another *migrations*, to a third *song*,

to a fourth *nesting*. Each person so appointed will have charge of the investigations under his topic, and will be allowed four years in which to gather material for a final report, making, each year, a report of progress. By this means the work can be more carefully and thoroughly done, and the results will be more satisfactory and valuable. Should any member in charge of a topic wish to make a final report before the close of the four years, he would be at perfect liberty to do so. Mr. J. E. Dickinson, Rockford, Ill., has accepted the chairmanship of the department of migration and has already begun active work. Others will soon follow.

In addition to this work, Mr. Howard P. Mitchell, of Mt. Sterling, Wis., desires to study "Nestling Down." This is a field which is almost wholly open. I sincerely hope that in this study Mr. Mitchell may have the hearty, active co-operation of every member. Write to Mr. Mitchell at once, and ascertain more fully the scope and plan of his work.

There may be other special lines of study similar to that of Mr. Burns in the present report on the Crow. It is needless to say that these special lines, as well as the work in general, depend for their value and interest upon the individual effort of members.

A further announcement of the work will be made in the next bulletin. Meantime any questions or suggestions will be gladly received.

The annnal dues of all members elected in October or January should be sent to the Treasurer as soon as possible.

Eleven members of the W. O. C. eligible to vote, have cast their ballots for officers of the W. O. C., for the year 1895, resulting as below :

For President —
R. M. Strong, 8.
J. A. Bryant, 2.

For Vice-President —
Ned Hollister, 7.
C. D. McLouth, 3.
J. A. Bryant, 1.

For Secratary —
J. E. Dickinson, 6.
H. E. Miller, 5.

For Treasurer —
Lynds Jones, 11.

For Executive Council (three to be elected)—*J. Warren Jacobs*, 9.
D. L. Savage, 7.
Walton Mitchell, 5.
C. A. Ely, 4.
H. C. Oberholser, 4.
A. H. W. Norton, 2.

F. L. Burns, *Judge of Election.*

I have found this statement correct.

R. M. Strong, *President.*

H. KENASTON, PRINTER, OBERLIN, OHIO.

PREFACE.

In 1891, Mr. Frank L. Burns was appointed chairman of a committee on special investigations by Mr. Lynds Jones, who was then President. Mr. Burns decided to begin a careful and thorough study of the American Crow, and his committee has been at work ever since that time, with this report as the result of four years' labor.

I believe that this report is the most comprehensive treatment of the American Crow ever attempted. It presents many facts of value, both to the popular reader and to the scientist. The food, habits, characteristics, etc., of the Crow are pretty fully discussed. There is much of interest to be found in the report, also, concerning adaptation to changed environments. An excellent series of descriptions of eggs will prove of value to the oologist. Among several tabulated arrangements, there is one of particular interest, showing the gradation in the size of eggs from the south, northward. Mr. Burns deserves great commendation for his careful and patient work on this report, and congratulations upon his success.

This is the first of a series of similar reports to appear in the future. Those who have contributed to its preparation, must certainly feel much satisfaction at the results of their efforts. This BULLETIN, as well as the Sparrow and Warbler Reports, is a fair representation of what the Chapter aims to do.

REUBEN M. STRONG, *President of the W. O. C.*

OBERLIN, O., February 15th, 1895.

INTRODUCTION.

During the latter part of January, 1891, President Lynds Jones, of the Wilson Ornithological Chapter of the Agassiz Association, appointed the writer Chairman of the Oological Committee. Mr. Jones, at the same time, offered a few suggestions in relation to the nature of the work to be performed; but left the general outline as well as the special subject to be studied, to my own judgment and discretion. While it was my original design to include notes on the nidification of several species in this report, and some material was received relating to the nests and eggs of *Accipiter cooperi* and *A. velox*, I finally deemed it a wiser plan to confine my efforts to a single species, one whose breeding habitat was the least restricted, and whose abundance is well known throughout the country. To accomplish anything in this line, however imperfectly done, requires much time; and the successors to President Jones, (Messrs. Willard N. Clute and Reuben M. Strong) continued me in office until a final report would be assured. To those gentlemen I owe much for suggestions, encouragement and other assistance from time to time.

The notes received were varied beyond description, and often much correspondence was required to bring out some hidden point, or to decide on the accuracy or reliability of the correspondent; it being my aim to incorporate only original and carefully prepared notes. Whatever interest or value may attach to the succeeding pages is chiefly due to this precaution. Twenty-eight states and two provinces are represented, either directly through the voluntary contributions of observers, or by means of exchange and purchase of specimens. The nature of some reports was such as to have no special value in a work of this kind, and consequently are not apparent in the general report. The amount of material not closely appertaining to oology was so great as to cause the compiler to overstep the boundary and take up the life history of *Corvus americanus*. No special attempt having been made to collect such notes, the history is necessarily fragmentary, without pretentions to completeness. Indeed, many interesting traits and peculiarities have been scarcely touched upon, or have been passed over entirely. If time, data, and interest warrant it, such neglected points may be made the subject of a paper at some future date.

I am greatly indebted to the following persons (not all of whom are members of the W. O. C.) for the assistance rendered me; many furnishing not only all the notes at their command, but securing additional data, through their correspondence and otherwise; at all times manifesting their eagerness to bring the report to a successful issue. To them I ex-

tend my sincere acknowledgments, only regretting my inability to make special mention of those contributing the more elegant and exhaustive reports: Stephen J. Adams, Cornish, Me.; Samuel L. Bacon, Erie, Penn.; Henry Beaumont, Jr., Nashville, Tenn.; A. C. Bent, Taunton, Mass.; Dr. William Bringhurst, Philadelphia, Pa.; Jacob Bastian, Jr., Statesville, N. C.; Lionel F. Bowers, Columbia, Penn.; John C. Brown, Carthage, Mo.; John A. Bryant, Kansas City, Mo.; H R. Buck, Wethersfield, Conn.; D. B. Burrows, Lacon, Marshall Co., Ill.; Harvey C. Campbell, Lansingburgh, N Y.; Henry W. Carriger, Sonoma, Cal.; William B. Caulk, Terre Haute, Ind.; Willard N. Clute, Binghampton, N. Y.; C. W. Cranfield, Long Island, Queen Co., N Y.; W. S. Cruzan, Sulphur Springs, Texas; W. L. Dawson, Oberlin, Ohio; Victor H. Dewein, Peoria, Ill.; Frederick M. Dille, Denver, Colo.; J. C. Galloway, Montgomery, Ohio; Horace A. Gaylord, Pasadena, Cal.; I. C. Green, Amherst, Mass.; Fred A. Gregory, Rockford, Ill.; Ellis F. Hadley, Dayton, Oregon; Edmund Heller, Riverside, Cal.; Carl Fritz Henning, Boone, Iowa; Ned Hollister, Delavan, Wis.; Miss Julia M. Hooper, West Bridgewater, Mass.; J. Warren Jacobs, Waynesburgh, Penn.; Wait C. Johnson, Centre Rutland, Vt.; Lynds Jones, Oberlin, Ohio; C. C. Maxfield, Danbury, Conn.; W. H. McNairn, Toronto, Canada; H. W. Menke, Lawrence, Kas.; Walton Mitchell, St. Paul, Minn.; A. H. W. Norton, San Antonio, Texas; Arthur H. Norton, Westbrook, Me.; Chas. D. Oldright, Austin, Texas; Rev. P. B. Peabody, Owatonna, Minn.; A. L. Pearse, Beatrice, Neb.; F. T. Pember, Granville, N. Y.; Dr. A. G. Prill, Sodaville, Ore.; Walter L. Richardson, Pasadena, Cal.; Robert R. Scorso, Afton, N. J.; A Mobray Semple, Poynette, Wis; F. E. Slevin, Jr., San Francisco, Cal.; J. W. P. Smithwick, Sans Souci, N. C.; Thomas A. Smithwick, Merry Hill, N. C.; Reuben M. Strong, Wauwatosa, Wis.; George N. Upham, Coffeyville, Kan.; Ed. VanWinkle, Van's Harbor, Mich.

Also notes were taken from data and specimens collected in the following localities: Reaburn, Manitoba; Stratford, Ontario; Fairfield County, Conn.; Millbury Mass.: Fleming, Cayuga County; Gates, Monroe County; Chili, and Phœnix, all of New York: Deleware and Montgomery Counties, Penn.; Baltimore County, Md.; Weaverville, Buncombe County, N. C.; Tarpon Springs, Fla.; Shabbona, DeKalb County, Montgomery County, and Bernadotte, Ill; Battle Creek, Ransom, and Kalamazoo, Mich.; Horse Shoe Creek, Kan,; Polk and Waukesha Counties, Wis.; Grinnell, Iowa; Steele and Meeker Counties, Minn.; Nelson County, N. Da.; Yakima County. Wash.; Largo, Mendocino County, and Los Angeles County, Cal.; Travis County, Texas.

Frank L. Burns.

THE AMERICAN CROW.

NOTES ON ITS HABITS: NOTABLY FEEDING, NESTING, ROOSTING, FLIGHT, RELATIVE ABUNDANCE, ETC., BY VARIOUS OBSERVERS IN WIDELY SCATTERED LOCALITIES.

"*Corvus americanus* is found throughout the United States with the exception of Southern Florida, where it is replaced by the sub-species *floridanus;* and the Central Plains and Southern Rocky mountain regions, where the American Raven (*Corvus corax*) abounds."

More or less abundant where-ever found as a resident or as a migrant, with but one common name, it is perhaps better known to a larger number of people than any other species indigenous to North America.

Held up as emblematic of the fallen, defeated, or unfortunate, the embodiment of cunning and cruelty, and published throughout the land as the personification of a knave and thief; is it any wonder that the ornithologist hesitates to defend the bird whose character is painted as black as its plumage? Like the Blue Jay, whom ignorance and superstition has accused of "carrying sticks to the devil," he is looked upon as the representation of evil, a sort of visible demon; and if he is not just going into mischief, he is popularly supposed to be just returning from it. Persecuted on every hand for many decades, in the East, it is a wonder that the species has not become exterminated. It has certainly decreased in Southern Pennsylvania, though almost imperceptibly, during the last fifteen years. Harmless, and even beneficial two-thirds of the year, prejudice against it begins to wane.

It is not my aim to justify the destruction wrought by these birds upon the cultivated fruit, grain and vegetables, or the eggs and young of wild and domestic birds, for I know it to be considerable at certain seasons of the year; but I fully believe the benefits derived from their destruction of injurious insects, rodents, etc., and their work as scavengers, largely offsets the damage done by them, if it does not indeed over-balance it. This applies to such districts as do not contain an over abundance of the birds.

To the bird's habitual watchfulness and acute senses, the situation of its nest, and to its breeding in the busiest time of the year, can be at-

tributed its abundance to-day. Driven from the field by the hundred and one devices of the husbandman, shot, trapped and poisoned, they will continue to play the part Nature intended they should, and can only become extinct with the extermination of that which gives life to the country—the timber.

We are indebted to the pioneer ornithologists, and to some of the present-day popular writers (the latter making no display of scientific attainments) for almost all we know of the habits of this and many other common species. A well prepared bibliography is beyond the scope of this present article, and the following original notes on the general habits, flight, food, etc., contributed from widely scattered localities, will unquestionably be acceptable to those interested from a scientific or economic standpoint.

Dr. William Bringhurst, Philadelphia, Pa.—"The American Crow remains with us throughout the Winter season, retiring on the accession of severe weather, to thickly wooded, hilly or mountainous regions. I live in a populous part of the city. At sunset Crows may be seen winging their way to their roosting places in New Jersey, returning in the morning and retiring to long distances inland, though some may remain nearer to us. The pine woods of New Jersey affords them a safe retreat. Reedy Island, at the head of Delaware Bay, being solitary and at a distance from the haunts of man, used to be a famous resort for them, and likely is yet. They are astute birds, keeping well out of the way of man, seeming to know a gun from a stick. A pair built a nest in Logan Square and probably raised their young. (See *Situation of Nests.*) As birds, animals, etc., are safe from molestation in these public parks, and can rear their young free from danger of attack by man, they soon acquire a degree of confidence."

John A. Bryant, Kansas City Mo.—"To the public, the best known bird of all our species is the Crow. This species is noted for its thievishness, and its high degree of cunning seems to go beyond mere instinct. It feeds principally on carrion, fish and insects, and the young and eggs of both birds and reptiles. Last Spring I was a witness to this bird's great voraciousness. I was driving along a country road when I noticed a Crow fly down into a farm yard, close to a hen with a number of chickens about two weeks old; it singled out a straggler, and deliberately pecked it two or three times, entirely disabling it. The chick's cry of distress brought the angry parent to the rescue. The Crow was driven away a few paces; but a moment later, when the hen's attention was drawn away from the wounded chick, the Crow seized his struggling victim, and flying a short distance, devoured it.

"As another case of this species' greediness, as well as its acute sense of

danger, I will relate the following experiment and its result. One day last May, while fishing, I noticed a Crow in the top of a dead tree, fifty yards or more away. It was constantly cawing and apparently watching me. Remembering the old darkey's adage, "A Crow knows a gun," I thought it a good time to test the saying; so picking up my wooden fishing-rod case, I walked toward the tree where the bird was perched some sixty feet from the ground. Having reached the tree I walked around the trunk and back to the creek, where I had left my gun, without the bird taking wing. On reaching the creek, I substituted the gun for the rod case, and again started for the tree. I had scarcely taken a dozen steps ere the Crow decamped to another tree; nor could I approach within gun shot. I then placed my gun on the ground and attempted to get closer, but I found it as wary as before; the sight of the gun had destroyed all former confidence. On my return to the creek, my companion, who was further up the stream, called to me to bring my gun. I immediately complied with his request, leaving the fish I had caught submerged in the water on a string. I was absent probably an hour. On approaching, I observed a Crow sitting on a tree above where I had left the string of fish. Suspecting some mischief from its excited actions, I ran forward quickly to see what was up. The Crow cawed rapidly three or four times and flew swiftly away. Simultaneously from the waters edge, arose two more Crows, acting on the signal given by the sentinel in the tree. As they were eating the fish below the creek bank, they could not possibly have seen or heard my approach. I found nothing remaining excepting ten eyeless heads strung on the cord, the Crows having pulled the string from the water and eaten the fish on the ground.

"The great Crow roosts of the Middle States, famous in pioneer days, seem to have diminished both in number of roosts and individual birds composing them. South west of this city there is quite a large roost, some members of which (400 or more by actual count) pass daily over the city to the Missouri river banks and sand bars, where they glean the refuse and debris washed ashore from the city. They congregate in November and disperse upon the breaking up of the Winter frosts. As the season advances, a half dozen or less may be seen in some pasture or marshy place, where the grass is short, feeding on all kinds of insects and their larve, crustacea, and in fact all animal life too weak to resist or avoid their rapacity. For several seasons past, a flock has frequented a marshy pasture, close to the public road near to the river. Among them could plainly be seen a pure white specimen. So often was it seen, that it became a matter of publication in our daily papers. Many attempts were made to secure this 'White Crow,' but none were successful, as the wary cunning of the 'Black Crow' was predominant."

Lynds Jones, Oberlin, Ohio.—"In Ohio the Crow is the terror of the corn field, and has been hunted until there is no getting near him. It is not strange if his nesting habits should conform to his general habit of watchfulness. Nests are often one hundred feet up in some such tree as shellbark hickory. I have never found a nest that could be reached without irons. In Iowa, the Crow is not an enemy to agriculture, and so is not hunted to any considerable extent, but he is nevertheless wary and not easily taken. Flocks are usually composed of less than ten individuals, but I have seen hundreds of Crows gathered together seemingly for some special purpose. There is always a prodigious cawing and much changing of position among the individuals at such a time; but when the flock rises, it disperses in all directions and apparantly never comes together again, unless at some other rendezvous. It may be simply a coincidence, but the flocks that have come my way have appeared about noon on an early Spring day. For so large a bird, its nest is remarkably near the ground. I have found many not over ten feet up in a thorn bush or scrubby oak."

Arthur H. Norton, Westbrook, Me.—"My observations on the nesting habits of the Crow have been made from Rockland to Portland, Maine, in several localities, but no where more than ten miles from the coast. Near Rockland, especially on the small islands of West Penobscot bay, and also the islands of a portion of Casco bay; the most constant features of the landscape are the dwarfed-spruce woods; but as we retire from the tide mark, on the mainland, we find a diversity of pine, oak, beech, etc., affording the bird a choice of nesting places. The nests that have come under my observation have invariably been placed in species of evergreen trees. The Crows have a habit which seems to be constant, when their nest is nearly completed, of calling in the low, imperfect voice of their young, as we hear them in July. By this means, I have located most of the nests that I have examined." [Another observer from the same state makes note of this. Can it be a peculiarity of the Maine bird alone? – F. L. B.] "While common throughout the belt, it does not seem to breed abundantly in any portion of it. Each woodlet or wooded island may be the breeding station of from one to five pairs. Metanic Island, in Penobscot bay, annually supports about five pairs. This number may be stimulated by the desire to pilfer the Night Herons (*Nycticorax nycticorax nævius*), which also breeds here in large numbers. On Crow Island in the same vicinity, the densely foliaged white spruce (*Picea alba*) is the chief form of vegetation, and in these trees the birds formerly nested, building very low (about ten feet from the ground). The Island is uninhabited and seldom visited by man. In 1885, the Raven

(*Corvus corax principalis*) took possession and no Crows nested there that season. There is constant warfare between the two species."

H. R. Buck, Wethersfield, Conn.—"Crows are very common with us at all seasons and especially so in Winter. Then they collect in large flocks, probably recruiting from much further north, and keep together pretty well until the breeding season. As a rule they spend the nights in the meadows of the Connecticut River, roosting in large numbers in the black oak trees, which are abundant in many places. At such times they are perhaps less watchful than in the day time, but nevertheless they always have guards posted, day and night. They can seldom be approached without the guards giving the alarm. Some twenty years ago my father shot sixteen by firing the contents of a double-barreled gun into a tree where they roosted. About dawn they begin to stir, and from sunrise until noon there is a steady stream of them flying to the neighboring hills, where they pass the day. Here they feed on berries, seeds, and almost anything they can pick up. They undoubtedly do good by killing larvæ and grubs, which they find under bark and leaves. Warm brooks are among their favorite feeding grounds, and they sometimes come quite close to farm yards in search of such scraps as may be thrown out. When the Spring thaws come, they may be seen almost constantly feeding on the edges of the melting ice, sometimes in company with the Herring Gull (*Larus argentatus smithsonianus*) which often comes up the river. Here they find acorns, berries, and the garbage from towns further up the river. They also collect in large numbers about the city dumps, showing a great fondness for carrion, and all refuse found in such a place.

"As the season advances, they abandon their routine habits, break up into smaller parties, and finally into pairs, when they set about the more serious business of nesting. In this locality they seem to like the sunshine, and avoid the deeper woods. When the eggs hatch, 'then the trouble begins' for the farmers, as the corn comes up about that time and the young birds must eat. I do not think the crows dig up the kernel before it sprouts, but from the time the blade first shows above the ground until it is three inches high, they seem to consider it their lawful property. They pull up the sprouts for the kernels at the end. The Crow does great damage in this way, especially in isolated fields, where the whole crop has sometimes to be replanted. There are two methods in use here for preventing this loss. The first and oldest way is to stretch white cotton strings around and across the field about six feet above the ground. The Crow proverbially is a cunning bird, and when he sees the strings, he expects a trap and seldom goes into the fields. This way has been largely given up on account of its inconvenience and cost. The way now follow-

ed is that of coating the corn with tar. This gives a bitter taste to the kernel, so the Crows let it alone after pulling up one or two spears. The usual way of preparing the corn is to pour hot water over it and let it soak awhile; then for every bushel of corn, put in perhaps a half pint of 'North Carolina tar,' as it is labeled This is better than the coal tar because it does not have to be melted. The water is then poured off and plaster, ashes, or sand is mixed to keep the kernels from sticking together. This hinders the growth probably a day or two, but it is a perfect protection from the Crows. Last Spring our tarred corn gave out and we finished the last row of one piece with clean corn. After it had come up, we found that the Crows had pulled *every spear* of this corn, while the tarred corn at its side was hardly touched. The damage done to corn is not confined to the first few days. When it is in the milky state, they tear the husks and eat off the kernels at the tips of the ears. The harm done in this way is not great; the Purple Grackles, Red-winged Blackbirds and English Sparrows doing vastly more damage than the Crows. On the other hand, the Crows undoubtedly eat injurious insects, mice, moles, snakes, etc. April 15, 1893, I saw a Crow kill a grass-snake. It would have eaten the snake had not some boys frightened it away. During Spring-plowing the Crows follow in the furrow to get the grubs that are turned up. Crows are much less abundant here to-day than ten years ago, and I am told that thirty years ago there were twenty where now there is one."

Frederick M. Dille, Denver, Colo.—"The American Crow breeds in considerable numbers along the courses of the South Platte and its tributaries in North-Eastern Colorado, although confined principally to the Valley of the Platte. I have found it breeding in the near vicinity of Greely, but from a point about eight miles below the town and down the river I used to find their nests quite abundant. In the groves of native cottonwoods, which are to be found scattered along the streams, the nests would be located; but a sufficient number could rarely be found in the same grove to justify one in saying that it colonizes to any extent. On an island, however, of about two acres extent, located in the middle of the stream, I found at one time five nests all containing eggs or young. The trees here were not as tall by half as those on the main shore opposite, but I suppose the Crows considered it a more secure locality for their nests, and I thought the same at the time, as I waded through the turbulent stream up to my waist in the water, in order to reach the island.

"There have been years when I have traveled not a little up and down the river without finding a nest, nor could I hear of any, by inquiry, from people living at lower points on the river. These periods of total absence

from their favorite localities, would usually follow a mild, open Winter, when the birds stayed with us all Winter, roaming around the farming districts in large numbers, but disappearing as the breeding season approached. Some Winters they stay throughout, and some seasons they breed here, but they seem to lack that fondness for a certain locality, a return to which, Spring after Spring, is characteristic of so many of the smaller birds." [In the East, the evidence tends to prove that the Crow will become attached to a certain locality and will nest in the immediate neighborhood year after year; however they are not so constant nor stubborn as our larger Hawks and Owls, nor as persistent as our Warblers, Thrushes, etc., but as a rule will speedily move their quarters if robbed a few times.—F. L. B.]

W. Harvey McNairn, Toronto, Canada.—"In the Spring or late Winter, just about pairing time, the Crows are here in immense numbers. Sometimes one can see a flock of several hundred. I am of the opinion that Crows from all parts of the country come here to spend the Winter. There is plenty of brush, nearly two hundred acres in a park, where they are protected; but comparatively few stay through nesting time. Sometime ago I found an old Crow that had become blind, and afterward heard of several other similar cases; judging from the fuss the others made and the birds sleek appearance, he had been fed by his comrades." [Doubtless the cause of the bird's blindness can be attributed to the excessive coldness. Several instances were reported last Winter (during a very cold spell) of Crows having their eye-balls frozen and bursted, in Chester County, Pa.—F. L. B.]

Reuben M. Strong, Wauwatosa, Wis.—"For several years the Crows had a roost in a tract of timber near here, occupying it during late Winter and early Spring. In the Spring of 1889 this roost was changed to a grove of conifers on the northern side of the bluff. Several hundred Crows gather at this roost at one time, and in their present location greatly disturb the patients in the sanitarium on the same bluff. A few spend the Winter here, but the bulk does not appear until after the middle of March. Old settlers say that birds of this species were comparatively rare thirty years ago They seem to be increasing in numbers. Civilization seems to favor them by furnishing them with an abundance of food, and their habits render them comparatively free from its dangers."

John C. Brown, Carthage, Mo.—"Nests are often found in maple groves, the birds nesting in colonies of six to a dozen pairs. The nest is usually so large that the female cannot be seen from below, while incubating. There are from two to six eggs in a set; in one case seven eggs were found. In this instance, two females must have deposited their eggs

in one nest, as four were of different shape and color from the remaining three. A number of 'runts' have come under my notice, the smallest of which was the size of a large Meadow Lark's egg."

W. S. Cruzan, Sulphur Springs, Texas.—"Crows are very numerous in most parts of this state. The American Crow breeds most abundantly along streams in the central part of the state. The streams are skirted with timber, composed chiefly of pecan, elm, and hackberry. During all times of the year, numbers may be seen. They gather the pecan nuts and eat them, also storing them away for future use. They will often fly from a pecan tree with nuts, to a place on the prairie near some bushes or weeds, and deposit a little pile of nuts, often as much as a pint or more."

Ellis F. Hadley, Dayton, Oregon.—"Crows are very common in the Western part of Oregon, found in flocks in Winter. They live on grain, which they gather after it has been sown, even pulling up the tender shoots. I have seen them come down and eat with the chickens, in flocks of from twenty-five to fifty individuals. They devour a great many insects and worms and are therefore beneficial to the country."

Samuel L. Bacon, Erie, Pa.—"In the Summer of 1886, by shooting at a Crow which was carrying something, evidently a heavy load, I induced it to drop that something, which proved to be a full grown Flicker just dying."

Robert R. Scorso. Afton, N. J.—"The Crow is among our commonest birds, yet its real history is but little known. The farmer generally considers it a costly nuisance, but the scientist is not sure of that. The farmer knows it feeds on grain, and the scientist knows it also feeds on harmful insects. The Crow is largely concerned in the distribution of the poison ivy (*Rhus toxicodendron*) and poison sumach (*Rhus venenata*), although this bird is not the only species concerned in this work."

In the reports just given, no mention has been made of our sable friend's propensity to appropriate the eggs of various domestic fowls, particularly those usually nesting in the field or woods, as the guinea and turkey. When once a nest is found, the happy possessor of the secret is a regular and punctual customer. When a boy, it was one of my many duties to "keep an eye on the turkey hens" during their nesting season, for they would "steal their nests." They generally sauntered toward the brambly fence corners nearest the woods, in an unconcerned manner, slipping quietly on their nests when no one was looking. Often I observed a "Black Crow" at the top of a neighboring tree, impatiently hopping from one foot to the other, spreading and folding his wings, or else

uttering a few low, contented "caws" to himself. I often imagined I heard him "smack his lips" in anticipation of his omelet, and he usually got it in spite of all I could do.

I do not believe the robbing of wild birds' nests by this species is nearly as common as we are led to believe ; at least I have not found it so, although I have been witness to an occasional raid made by this bird upon the nests of the Purple Grackle and Robin.

I have examined the stomachs of a number of young in the nest with the following result : April 30, 1892. Four large young. Time, 10 a. m. No. 1 contained broken bits of corn, a leg bone of a meadow mouse, several grubs, some weed seeds, and refuse from barnyard manure. No. 2. Three bones of a mouse or some other small rodent, broken bits of corn, two grains of oats, and some mouse hair. No. 3. Three imperfect grains of corn, three small bones, and grubs, worms, and refuse from the barnyard. No. 4. Grubs, bones of small rodent, three grains of corn, and some weed seeds.

April 30, 1892, 12 noon. Two young, one day old. White grubs only.

May 12, 1892, 7 a. m. Five young, six days old. No. 1. Large quantity of earth worms. No. 2. Earth worms and three beetles. No. 3. Earth worms and three beetles. No. 4. Earth worms and one piece of corn. No. 5. Earth worms and three beetles.

May 8, 1894. 11:30 a. m. One young, two days old. Larvæ of some large insect, probably that of a moth.

When a Crow has tasted the tender chicken, he is in some respects like the man-eating tiger, for he will return again and again until he is shot, or his intended victims are placed well out of his reach. Verily, while "meat is at hand he must eat." If the farmer and poultry fancier would encourage that sturdy little warrior, *Tyrannus tyrannus* (King bird) to nest about the place, they would require no other safeguard during the nesting season at least.

During the Winter of 1893 and 1894, I often had occasion to be in a certain little valley that lies on the borders of Chester and Delaware Counties ; many times I have seen the vast flocks just setting out for their morning meal. During the mild weather they roost in the hard-wood timber of this neighborhood. The birds usually fly in an irregular train with no particular order, but I have noticed exceptions to this. One morning just at daybreak, I observed the advance guard of about five hundred rise simultaneously from the woods to my left, and without a single "caw" fly over my head. They were about six deep, the long front dressed with military precision. They appeared to be on the same level. This battalion was followed by four more flocks, all rising successively

from different portions of the woods or from separate groves; all in the same order and about five hundred yards apart. They flew for some distance, probably half a mile, before the individuals on the left swung ahead and led their respective troops. There were not less than twenty-five hundred birds, probably more. At night they retired to the above mentioned timber in one long irregular train; but it is my belief that each flock retained its individuality throughout the day. This large concourse of birds probably repsesented a small portion of Chester, Delaware and Montgomery Counties; it being highly improbable that there were any migrants from the North or from the mountains of the bordering counties, owing to the almost entire absence of sheltered roosts of evergreen trees. During the colder, and stormiest period of the Winter, these flocks retired to the scattered groves of conifers and cedars of the three counties, usually breaking up in smaller companies, from necessity.

NIDIFICATION.

Situation.—The Crow usually chooses a tree situated as deep in the woods as possible, or in some quiet little grove of tall trees, where it can nest free from molestation and yet be near to its chosen feeding ground. The number and variety of eligible situations, the individuality of the bird, the *degree* of hostility prevailing in its neighborhood and the consequent measure of activity displayed by its enemies, having a large share in influencing the selection of a nesting site. Now and then a pair bubbling over with boldness or over confidence in man, will build in an isolated tree, usually but not invariably an evergreen, in the middle of a field or in an apple orchard, Mr. Frederick M. Dille collected a set of eggs from a tall cottonwood, in the midst of a dense grove, on Clear creek, directly on the outskirts of the city of Denver. He says: "I was greatly surprised at finding a pair of Crows breeding in such close proximity to a large city; but the birds were very quiet and retiring, as if they realized the delicacy of their situation." Mr. W. N. Clute, Binghamton, N. Y., cites two instances of this species nesting within the city limits. Dr William Bringhurst, Philadelphia, Pa., takes note of a pair building in Logan Square, on one side of which stands the Academy of Natural Sciences, on another a grand Cathedral, etc., every front being built around, and the square much frequented. At a later date, the same gentleman informs me that he has *heard* of a nest established among the trees of Independence Square, right in the heart of the oldest portion of

the city. It would surprise me little to learn that this was correct and that this saucy bird had raised its young within touch of the "Cradle of Liberty."

Mr. A. H. Norton, Westbrook, Maine, writes: "The first nests that I have found each season, have been built in trees at the border of an opening or grove, where the snow has disappeared. The point of the compass not, as might seem probable, having influence. The Southern exposure receives the sun's action, but the wind and water frequently are as rapid in melting the snow from northern or north-western exposures. The bird seems to like the sunshine (or society) and avoids the deeper woods." Mr. Henry W. Carriger, Sonoma, Cal., has found the nesting sites extremely varable, finding them in deep woods, groves, and along sloughs. He writes: "Previous to 1891, about ten pairs nested in a grove of young white oaks, but in 1892 not a nest was to be found there. The birds had gone, for some unknown cause, to a large grain-field, about four hundred yards distant, where they built their nests in large white oaks." Mr. Edmund Heller, Riverside, Cal., states that the Crows in that vicinity nest only on the bottom lands, never in the canons nor on the mesa. Large tracts in that section are without their quota of birds. Mr. Samuel L. Bacon, Erie, Pa., writes: "My observations lead me to believe that if unmolested, a pair of Crows will nest in the same vicinity for many years if not for a lifetime. To corroborate this belief, I will say that a pair of Crows (presumably the same pair) have nested for the past four years in one piece of woods, and these four nests are within two hundred feet of each other. In these woods, which covers about three acres, there are the remains of at least ten other nests, and I feel sure they were built by the same pair." Mr. C. W. Crandall has usually found them breeding in low woods, with parts swampy or containing a small pond, on Long Island, N. Y. He also gives some notable situations: One nest fifty feet from a habitation, in a gigantic elm, at the roadside, another, one hundred feet from group of houses; another not more than thirty feet from a railroad in constant use; another, one hundred feet from a nest of Red-shouldered Hawk. Mr. Lionel F. Bowers, Columbia, Pa., and Mr. Arthur H. Norton, Westbrook, Me., have found their nests situated in the midst of Black-crowned Night Heron colonies. I have found them close to the nests of the Cooper's and Broad-winged Hawks, which they will rob if left uncovered for any length of time; and also in one instance, within a few yards of a Grey Squirrel's nest.

The trees usually selected for nesting sites in the Eastern states, are the white pine, *Pinus strobus*; red oak, *Quercus rubra*; chestnut, *Castanea sativa americana*; white spruce, *Abies alba*; white oak, *Q. alba*;

pitch pine, *P. rigida* ; scrub pine, *P. banksiana* ; hemlock, *Tsuga canadensis* ; balsam fir, *Picea balsamea* ; double spruce, *A. nigra* ; white elm, *Ulmus americana* ; red or swamp maple, *Acer rubrum* ; tulip poplar, *Liriodendron tulipifera* ; and gray or canoe birch, *Betula papyrifera*. Middle states: chestnut, *C. S. americana* ; black oak, *Q. c. tinctoria* ; white oak, *Q. alba* ; hickory, *Carya tomentosa* ; shellbark, *C. alba* ; pitch pine, *P. rigida* ; white pine, *P. strobus* ; chestnut oak, *Q. prinus* ; red or swamp-maple, *A. rubrum*; red cedar, *Juniperus virginiana*; hemlock *T. canadensis*; beech, *F. ferruginea*; tulip poplar, *L. tulipifera*; white elm, *U. americana*; sugar maple, *A. saccharinum*; white cedar, *Chamaecyparis spheroidea* ; occcasionally white ash, *Fraxinus americana* ; wild red cherry, *Prunus pennsylvanica*; wild black cherry, *P. serotina*; flowering dogwood, *Cornus florida*; American holley, *Ilex opaca*; apple, *Pyrus malus* ; yellow birch, *B. lutea* ; black birch, *B. lenta* ; and white birch, *B. a. populifolia*. Southern states : yellow or long leaved pine, *Pinus palustris* ; short leaved pine, *P. mitis* ; white or spruce pine, *P. glabra* ; pitch pine, *P. australis* ; cypress, *Taxodium distichum* ; live oak, *Q. virens* ; beech, *F. ferruginea* ; swamp maple, *A. rubrum* ; red cedar, *J. virginiana* ; elm, *U. americana* ; tulip poplar, *L. tulipifera* ; pecan, *Carya olivæformis*; and hackberry, *Celtis occidentalis*. Western states: Spanish oak, *Q. falcata* ; white oak, *Q. alba* ; red maple, *A. rubrum* ; Sycamore, *Platanus occidentalis*; cottonwood populus, *monilifera*; beech, *F. ferruginea* ; poplar, *L. tulipifera* ; white walnut, *Juglans cinerea* ; white elm, *U. americana* ; tamarack, *Larix americana* or *L. occidentalis* ; ash, *Fraxinus americana* and *F. quadrangulata*. California : live oak, *Q. chrysolepis* ; white oak, *Q. alba* ; willow, *Salix (?)* ; cottonwood, *P. monilifera* ; ash, *F. oregana* ; and alder, *Negundo aceroides (?)*.

Position.—The nest is usually placed in the upright fork or crotch of a tree, not seldom on a horizontal branch, at no great distance from the pole or main stem. Mr. C. W. Crandall discovered a nest on Long Island, N. Y., in a most peculiar and unique position. In his own words: "Looking from the brow of a hill some thirty feet high, I discovered a nest situated in the fork of a chestnut tree, which was at the base of the hill, the nest being placed forty-five feet up. The parent bird was sitting, and strange to say, was entirely visible from where I stood. Thinking this was very peculiar, I resolved to investigate. Upon climbing to the nest, I found that by some means, probably a heavy wind, it had become dislodged and had turned almost completely on its side, the eggs just being held in by the rim of the nest. The bird had to sit with one side against the *bottom* of the nest, with the other side exposed."

HEIGHT.—The distance from the ground at which the nest is placed, varies from four to over one hundred feet. Where the birds are unmolested, they build remarkably near the ground for so large and naturally suspicious a bird. Where they are persecuted and continually hunted, the instinct of self-preservation, with which they are most certainly highly endowed, prompts them to build in practically inaccessible trees, in many cases. Such trees as shellbark hickory, sycamore, large crooked black oaks, trees over-looking precipices or deep water, are often very difficult to climb, and the Crows often build their nests at a great height in these trees. Where the bird chooses an uninhabited island, an unfrequented swamp or the deep woods for breeding purposes, the nest is usually placed much nearer the ground than it would otherwise be. On the whole, mankind exercises more influence over this than is generally known. The average height throughout the country is about forty-five feet. Minnesota, North Dakota, Manitoba are but thinly settled, and the average height from the ground is found to be only twenty feet. The soil of the Eastern states is in a high state of cultivation, and the New England farmer looks with an unkindly eye at the depredations of this black-feathered bird. His search for food is interpretated as a raid which must be resisted by force of arms; hence the bird becomes shyer and builds as high up as it is possible to do. The data before me gives an average of sixty feet above the ground.

CONSTRUCTION.—Mr. Lynds Jones, Oberlin, Ohio, says: "The time taken in building the nest varies with the weather, and that is seldom constant in March or April. I have known a nest to have been begun and completed within a week, in fair weather. But the birds are not constantly at work; theirs' is a very short working day of not over four hours. In bad weather I have known a nest to be three weeks in building." The following interesting table has been deducted from the very full notes furnished me by Mr. Harvey C. Campbell, Lansingburg, N. Y. It is to be understood that in the dates given for *second* sets, in all cases where the eggs were incubated, allowance has been made to give the dates of fresh and completed sets. With numbers 1, 3, and 4 the *actual* dates on which they were taken are given, and it is by no means certain that the last egg was deposited on these dates; quite probable a day had intervened.

		MO.	DA.	
No. 1.	1st set.	April	19	15 days.
	2nd set.	May	4	
No. 2.	1st set.	April	17	14 days.
	2nd set.	May	1	
No. 3.	1st set.	April	17	14 days.
	2nd set.	May	1	

		MO.	DA.	
No. 4.	1st set.	April	20	15 days.
	2nd set.	May	5	
No. 5.	1st set.	April	23	14 days.
	2nd set.	May	7	

We learn from this table that it requires about fourteen days for the Crow, after it has been robbed, to choose a nesting site, construct its nest, and deposit the second set of eggs. Allowing six days for the female to deposit her eggs, the nest must have been constructed within eight days, and probably within six days.

Composition.—The composition of the nest varies somewhat, of course, with the local surroundings, as well as with the individual builder's experience and "taste" as to the proper material for building They rarely use a deserted squirrel's nest. The typical nest is composed of coarse sticks, strips of bark, clods of earth, dead leaves; lined with hog bristles, strips of grape vine bark; the inner bark of chestnut or oak, cow hair, or horse hair. Occasionally the body of the nest will contain moss, grass, rootlets, corn stalks, cloth (often from some dilapidated "scare crow"), corn husks, weed stalks, pieces of rope, dried cow and horse manure, feathers, pieces of matting, sheep's wool, twine, or seaweed. The lining is sometimes made up of strips of cedar or juniper bark, dead leaves, sheep's wool, feathers, or skunk's hair. Quite often in some localities, especially in the Eastern states, pine needles are used for lining; while in many other localities, where the surroundings will permit the use of this material, it is not used at all. Much binder twine is made use of in the West. Rev. P. B. Peabody, Owatonna, Minn., writes: "It has apparently become as indispensible a nesting material to the Crow as snake-skins are to the Crested Flycatcher." While Mr. Lynds Jones has the following to say regarding this interesting subject: "First, the foundation of dry sticks, into the bottom or side of which some light colored dry grass is introduced—which is invariably the Crows' 'ear mark.' Felted on this is a layer of leaves, then a layer of grape vine or linder bark, and finally a layer of some soft animal material; in Iowa it is cattle hair, in Ohio it is often wool. In Iowa we now often find nests well supplied with binder twine." In relation to the great strength and durability of the nest in connection with the composition, I can do no better than quote from the notes of Mr. Frederick M. Dille, Denver, Colo.: "I find their nests to be perfect models of strength and durability as compared with other large nests. Not so broad as a Hawk's nest, but deep and well proportioned. So deep and rounded at the bottom that one or two of the eggs will be on top of the others, but well bedded down with some of the lining, so as to avoid all chances of breakage. Made of coarse twigs and

small sticks of the cottonwood, the nest well stuck together by a generous supply of mud or adobe clay, and further strengthened by its situation in some suitable fork of the tree. In this open country of ours, where we have great winds that sweep the trees clear of any other nests, we find that those of the Crow survive them all ; and as this species rarely uses an old nest twice over, they provide a great many structures for the Long-eared Owl, Sparrow Hawk, Cooper's Hawk, and sometimes the Great-horned Owl. (The Long-eared Owl prefers a Crow's nest to that of a Magpie's. They do not mind the exposure and sunlight, and they do appreciate the depth which allows them to conceal their stature while incubating.) The principal material used for lining is cattle hair, which in some nests plainly indicates that it was pulled from the hide of some dead 'steer' lying conveniently near on the plains. I have also found nests lined from the scrapings of horse hair from a curry comb ; these were probably picked up at favorable moments from around the barn of some isolated ranch. It is well matted against the sides, with a generous supply in the bottom." I would also add the Broad-winged Hawk to the list of birds using old nests of the Crow.

Mr. John A. Bryant writes the following : "Last June I found a nest built in a tall cottonwood standing alone. It was placed on a horizontal limb, midway from tip to trunk, built entirely of green leaves and twigs. The leaves still had a greenish cast, although shriveled, twisted, and brittle. No doubt it was built from the branches blown off by a recent storm. This was about the middle of June. The builders had doubtless been driven from some other locality." I would add that the green leaves were most probably used for greater protection against some foe, possibly man. In this instance the birds showed an instinct almost akin to reasoning, or it is at least a remarkable incident. In North Carolina the nesting material differs somewhat from that already given, as might be expected. Cypress bark, moss, sticks, layer of earth, roots, pea and potato vines ; lined with grape vine bark, moss, or hair. The California bird differs in the lining of her nest, more often using the covering of soap root, strips of redwood bark, moss, wild cotton, or cow hair, than anything else.

It is found that the Crow does not vary in the material used, in any one locality, to any great extent ; yet there is considerable difference in the construction or the "workmanship," as it has been called. It would seem that the older birds, having the most experience, would construct the better nest. However this may be, some individuals construct more subtantial nests than others. When a pair of Crows have been disturbed in their nidification, and are forced to rebuild several times, the result

would naturally be a frail, hastily put together affair; scanty in both material and labor expended. Such a structure came under my notice on May 29, 1887, in a dark, swampy thicket of a mixed growth of trees and saplings, and abounding in greenbriers; at the extremity of a branch of a small, wide-spreading beech tree, fifteen feet above a stagnant pool of water, I found the nest, a mere platform of slender twigs laid together in the manner of a Cuckoo's nest, but without such extra embellishments as pieces of green leaves, tree blossoms, etc., usually found in the latter's domicile. It contained two eggs, and three young birds just hatched. The parent birds successfully reared their brood of three young, and would surely have increased the number to five, had I not arrived just in time to save the two unspotted eggs, which are now included in my large series of sets of this species.

Little attention has been paid to the composition of nests in relation to the seasonal or climatic conditions. This is surprising, considering the many interesting facts which might be brought to light in furtherance of of some nicely laid hypothesis. The nest is the direct result of the bird's ingenuity, bounded only by its instinct and surroundings. My notes bearing on this subject were collected during a decade of years, and are sufficiently numerous and accurate to enable me to make the following deductions: Nests built during March and the first week in April, do not differ in external material from the typical nest, but in addition to the strips of soft lining of tree bark and rarely grape vine or cedar bark, *all* nests examined contained an inner lining of some animal substance, of which horse hair constitutes about 50 per cent., hog bristles 40 per cent., and sheep's wool, feathers, and cow hair the remaining 10 per cent. Nests built during the last week in April and during May, are lined with strips of tree and grape vine bark, 63 per cent. containing no other lining, 37 per cent. containing in addition to the above lining, hog bristles; no other animal substance being noted in late nests. While the Crow shows a marked tendency, during the height of the nest-building season, toward gathering indiscriminately whatever comes handiest for lining, the evident knowledge displayed by the early breeders in choosing the warmest material at hand; and the late builders in lining their nests with what is undoubtedly the coolest, speaks highly for the intelligence of the bird. That this does not apply to certain individuals alone, (which may habitually nest early or late as the case may be), is proven by notes at hand of those that have built their second nest after the first had been destroyed. While the bulk of the nest may be the same, they do not place animal material in the lining of the second nest, although the first nest usually contains it. No doubt exceptions will be found to this rule, but I have found it to hold good in all cases under my observation.

Measurements.—Full and reliable data on the measurements of the nest are, with a few exceptions, a minus quantity. Few observers think it worth while to take notes of this kind, and the wide latitude taken by those who have recorded the proportions of the nest, renders it extremely difficult to arrive at a safe average. Outside of New York and Pennsylvania, the notes are not sufficiently numerous to give an average of value.

	OUTSIDE.		INSIDE.	
	DIAMETER.	DEPTH.	DIAMETER.	DEPTH.
Average	16.80	10.65	7.35	4.15
Largest	24.00	20.00	9.00	5.00
Smallest	12.00	7.00	6.00	3.00

The above is deducted from data collected in New York and Pennsylvania, and all measurements are given in inches and hundredths of an inch. While the inside measurements do not differ materially between early and late nests, the external measurements do to some extent. The early builder constructs a slightly larger and much more compact nest than the bird building late in the season, *i. e.*, last week in April and first week in May.

EGGS.

Time Between Completion of Nest and Deposition of First Egg.—Little or no light has been thrown on this, Mr. Ellis F. Hadley, Dayton, Oregon, asserts that a month intervens, I have found that the female, if hard-pushed, will deposit her first egg as soon as the nest is completed; at other times, often from four to eight days passed before the first egg was laid.

Deposition of Full Clutch.—Mr. Lynds Jones has found that if the female be hard pushed, as is often the case when the nest is long in building, the eggs are laid each day until the set is completed, othewise often a day intervens, when she is not so pushed. Mr. Victor Dewein, Peoria, Ill., has found that in some cases it takes eleven days to lay a full complement of five eggs. I would say that ordinarily a full clutch is deposited in as many days as there are eggs in the set, in South-eastern Pennsylvania.

Nunber of Eggs in a Set.—It has only been of recent date that the "number of eggs in a set" has received much attention; and many of our most eminent ornithologists and oologists have gotten themselves at once into deep water, when they set down arbitrary figures without suf-

ficient data to back them up. It is evident to all, that where a species has as wide a breeding range as *Corvus americanus*, the number of eggs in a set must naturally vary according to locality and environment. Here Nature shows her wisdom, or rather the guiding hand of the Infinite Creator is here most strikingly shown. In the extreme northern and northwestern breeding range of this species, where competition in the struggle for proper and suitable food is freer, the birds are enabled to raise a larger brood than those of the South, where competition is much greater. Another condition exists in the North-east, which is scarcely less powerful than the foregoing—that of persecution. While the bird may be as free from competition of its class as its Western brethren, the persecution or competition with *man* exists in so great a degree as to reduce its feeding ground materially, possibly one-half. Probably no fiercer warfare is waged against this species any-where in the country than in New York and New England. While the maximum number of eggs in a set is as great as or greater than that of the Central and Western states, the average falls below the latter. It is extremely rare to find more than five eggs in a set south of the 30th parallel of latitude. Out of 320 sets, known to be complete, collected in the Humid Province, those taken south of the 36th parallel, from the Carolinian and Austroriparian faunal areas, 50 per cent. are in sets of five eggs each, no larger sets being reported. In the Middle and Eastern states, 54 per cent. are in sets of five or *larger*. In the Western states (only those included in the Humid Province are given), 73 per cent. are in sets of five or larger. The more robust the bird, the greater the abundance of food and relative freeness from persistent persecution, are without doubt conducive to the increase in the number of eggs in a set, as this species is not known to lay more than one clutch in a season, unless the first has been disturbed or destroyed in some manner.

The largest number of eggs in one nest has been reported from Iowa—a "set" of eight eggs But the fact that four of these eggs were darker, larger, and further advanced in incubation than the remaining four, evidently proves it to be a double set, although but one pair of birds was observed about the nest. A number of sets of seven eggs are without doubt double sets also. The difference in coloration and incubation proving them to be such. That seven eggs are *not sometimes* deposited in a clutch by a single female, I am not prepared to assert; but considering the abundance of the species, I do consider such sets extremely rare. I have never found one, although I have looked into several hundred nests the pasts ten years. Mr. C. W. Crandall, Woodside, Queen's County, N. Y., has been more fortuate. In answer to an inquiry regard-

ing the matter, he says: "My four sets of seven are *all*, in my estimation, *perfect sets*, laid by their respective females. None being a partnership between two females. Circumstances at the time of taking each set and my investigations satisfy me of this. I knew sets of seven were very rare, but did not think them so extremely scarce as you say. One of my sets of seven shows three distinct types of markings; but I do not consider this point, for I have found the same to occur in sets of four, five, and six eggs each. I do not believe it possible that two female Crows would occupy the same nest, and know of no authentic instance of the kind." A nest containing seven eggs, was found by Mr. Stephen J. Adams, Cornish, Me,, May 4, 1887. In his notes, Mr. Adams says: "Three hatched in four days, the balance in seven days." Another instance of which I have full data, is recorded by Mr. A. Mowbray Semple, Poynette, Wis., and is probably a bona fide clutch, and will be treated under the head of "Measurements of eggs."

It has occasionally been my good fortune to secure a set of Crows' eggs, spending probably twenty minutes or more near the tree without attracting the attention of the rightful owners; the belated and enraged birds appearing just as I was preparing to leave. Not every set was fresh, a few contained embryos more or less developed. It has suggested to me the possible chance of a hard pushed alien female, whose own nest had been destroyed, escaping the notice of the rightful owners and depositing her own egg, with those that may be already partially incubated, or may as yet be incomplete as a set; and continuing to do this daily until she has no more to lay. I can account for the apparently double sets in no other way. It is improbable that the Crow is ever polygamous, indeed I believe them to be doubly monogamous.

LOCALITY.	AVERAGE.	LARGEST.	SMALLEST.
N. C., Penn.....	4 or 5	5	3
Penn.....	4 or 5	6	2
N. Y., Ont.....	4 or 5	7	2
New Eng.....	4 or 5	7	1
O., Ind., S. Mich.....	5	7	4
Ill., S. Wis., Iowa....	5	7	3
Minn., N. Da., Mana..	5	6	4
Cal.....	4 or 5	6	2
Colo., Neb.....	5	6	3
Wash., Ore	5	6	4

When more than one set is laid by a female in one season, the second set *usually* contains one egg less than the preceeding set. From the notes received from Mr. Henry Beaumont, Nashville, Tenn., I extract a notable case of continuous nesting. Early in 1892 a pair of Crows took possession of an old nest, probably once belonging to a pair of Hawks;

situated in a poplar tree, ninety-two and a half feet up. The female was shot after depositing three eggs, and the male marked on the left foot by a rifle ball. The male re-mated during the season of 1893, and after remodeling the old nest, and putting in a fresh lining, the female deposited five eggs, which were taken on May 7th. Another set of five eggs was collected six days later (May 13th), and on the 25th both male and female were killed, the nest containing three eggs and the female found ready to deposit the fourth egg. It would appear that after the first five eggs were laid, the female having deposited her full quota, would have no more eggs forming in her ovary ; yet within twenty-four hours, assuming that but one egg was deposited daily, she deposits the first egg of the second clutch. This would tend to prove, admitting the above conditions, that the egg is less than twenty-four hours in the complete process of formation, including the shell or calcareous envelope. The time between the loss of the second and beginning of the third clutch is much greater, the female commencing to show signs of exhaustion. She takes about eight days for recuperation and the development of the egg, before oviposition begins anew. Before the completion of this set, the bird is destroyed, thus abruptly ending the interesting observations.

Dates for Complete Sets.—Without question, the average dates for fresh and complete sets varies from year to year, according to the existing conditions of the climate. Deep snows, heavy frosts, continuous storms, etc. naturally retard nest-building ; and, indeed, puts the birds on the alert to secure subsistance. Often, if the Winter be unusually severe or prolonged, the would-be nest-builders require further time in which to recover their natural strength and hardiness. The dates given below cover a number of seasons, and the averages are reasonably accurate for the purpose ; the dates from which they were computed were first reduced by subtracting the number of days of incubation. The dates are therefore for fresh and complets sets.

LOCALITY.	AVERAGE DATE.		EARLIEST DATE.		LATEST DATE.	
	MO.	DA.	MO.	DA.	MO.	DA.
North Carolina.....	April	9	March	24	May	12
Tennessee.....	April	16	March	26	May	25
Pa., N. J., Md.....	April	19	March	29	May	25
N. Y., Ont.....	April	21	April	7	June	7
New England.....	April	28	April	7	June	20
O., Ind., S. Mich.....	April	26	March	26	June	3
Ill., So. Wis., Ia.....	April	15	March	25	May	10
Minn., N. Da., Mana..	May	11	April	20	June	1
California	April	16	March	23	May	8
Colo., Neb., Kan.....	April	27	April	1	May	23
Ore., Wash.....	April	30	April	15	May	20

Accordingly, the usual month of nidification throughout the country is the month of April. From North Carolina, north through the Atlantic states, there is a gradual increase in the dates to New England, and west from the Middle states to the boundary of the Humid Province, with the exception of Illinois, southern Wisconsin, and Iowa. The latter averaging earlier than Pennsylvania, which may be accounted for by the absence of notes on large series from any one locality, the numerous but short reports from this section of the country containing records of the earliest sets only. In the Arid Province, California averages later than North Carolina, with Oregon and Washington but two days later than New England. The given average in the Arid Province, with the exception of California, can hardly be relied upon, by reason of the small amount of material collected.

Incubation.—It has been seen that the nesting period extends from early March to late June, and that climatic and seasonal conditions greatly influence the birds. Hence, it is evident that to ascertain the correct period of incubation would require considerable self-denial or an unusual talent for original investigation on the part of the amateur. Therefore it is not at all surprising that nothing of value has been received bearing on this subject. I have found the period of incubation to be about fourteen days ; but the difficulty of making observations, coupled with the lack of sufficient time to visit the nest whilst the parent bird was off in search of food, and the consequent meagerness of data, compels me to state that I am by no means sure that this is the average period.

Many ornithologists lack the opportunity and others the inclination to penetrate the mysteries of this neglected branch of the science. While we might have fewer eggs to hoard in our cabinets, or proudly exhibit to our oft-times overcurious friends and neighbors, we might secure notes of far greater value from a scientific stand point, and at the same time show our love for the science, if we would pay more attention to this point. That this subject is not open to all is evident. It requires a thorough knowledge of the habits of the species under observation, unlimited time, much patience and often considerable wood craft, with too often disappointment and defeat the only reward.

Measurements. — "The majority of widely distributed species are more or less affected by geographical variations, from varying influences of climate and other surroundings."—*Robert Ridgway*. If this be true in relation to the birds, and the researches by our most eminent scientists have proven it to be so, it must almost necessarily hold good in respect to their nests and eggs. While the nest must vary indefinitely in accord-

ance with its local surroundings and can have no fixed scale of variation, the egg, equally with the bird, must have a fixed and uniform scale of variation in accordance with the latitude or altitude at which it is found, most particularly in size and measurements.

The following table of accurately measured specimens actually collected in the sections named, gives what I believe to be fairly accurate averages, and a surprisingly uniform scale of gradation in size from South to North and from East to West in the Humid Province. Owing to the small amount of data at hand, I am unable to trace an unbroken line of variation in the Arid Province; but from that at my disposal I find the minimum to be on the coast of California, and the maximum in the south-western portion of Washington, with Colorado between. This increase or decrease in measurements in different localities needs no other explanation than that which has already been given as the probable cause of the increase or decrease of the number of eggs in a set; which is too well known to all ornithologists to warrant further comment.

MEASUREMENTS.

LOCALITY.	NO. OF EGGS MEASURED.	MAXIMUM.	MINIMUM.	AVERAGE.
North Carolina.....	27	1.73 x 1.26	1.48 x 1.08	1.62 x 1.14
Pennsylvania.....	225	2.06 x 1.12	1.42 x 1.05	1.64 x 1.15
New York.....	320	2.03 x 1.33	1.43 x 1.08	1.65 x 1.15
New England.....	97	1.86 x 1.40	1.43 x 1.12	1.66 x 1.17
O., Ind., S. Mich....	44	1.79 x 1.19	1.55 x 1.10	1.68 x 1.17
Ill., S. Wis., Ia.....	132	1.95 x 1.27	1.51 x 1.13	1.68 x 1.18
Minn., N. Da., Mana.	35	1.94 x 1.40	1.55 x 1.17	1.73 x 1.27
California.....	29	1.78 x 1.16	1.48 x 1.03	1.61 x 1.13
Colorado.....	17	1.72 x 1.14	1.59 x 1.13	1.63 x 1.15
Washington.....	14	1.83 x 1.19	1.64 x 1.12	1.71 x 1.18

I also have measurements from Ontario, Maryland, Tennessee, Missouri, Kansas, and Nebraska, but so few in number that the averages could not be that of the localities named, and therefore can have no bearing on the subject. It is safe to make the assertion that there is an increase of about one-hundredth of an inch in the measurements of the average egg, corresponding to an increase of about two and one-half degrees in latitude or its equivolent in altitude. The increase from East to West is not so pronounced nor constant, yet the data at hand shows an average increase of one-hundredth of an inch to a corresponding increase of four degrees of longitude from the Atlantic seaboard to the western limits of the Humid Province. The surprisingly great difference between the maximum and minimum eggs (.64x.35) leads one to speculate on the probable number of eggs of *Corvus americanus* to be found in certain of the innumerable oological collections, masquerading under the

names of *ossifragus*, *caurinus*, *corax principalis*, or perhaps even *cryptoleucus*. The variation between early and late sets is very great in some, and small in other sections of the country. However, some difference does exist, and always in one way. The eggs in the early sets average .06x.03 larger than those of the late sets. The latter are not known to be second sets, but are believed to be those of the more timid and wary birds, building after the leaves have yielded a more effectual screen for their nests. While I have no conclusive proof of it, I believe the earlier sets are those of the older, or more hardy, or better developed birds. It is remarkable that the latter not only produce the larger egg, but also the greater number in a set. In five instances where it is known that the birds laid second sets after the first had been taken, the second sets averaged .02x.01 less than the former, and usually contained one or two eggs less in a clutch.

The average measurements of 979 eggs is 1.65x1.15. This average is *considerably* under that of our professional brethren; yet in all probability no average measurement of the eggs of this species is founded on as numerous and accurate data as is that just given.

It has often been a question to many whether the number of eggs in a clutch has any influence whatever over the size of the egg. It is often remarked that the larger the clutch the smaller the egg, and *vice versa*. This is true to a certain extent; there are, of course, exceptions to all rules; for instance: a set of seven eggs collected in Wisconsin gives an average of 1.69x1.19, which is slightly larger than the true average for that part of the country. A series of sets of seven (if they could be had) might show a very different average.

The following tabulated form will render this more clear.

Average size of	21	sets of	6	eggs each,	1.66 x 1.16
"	80	"	5	"	1.65 x 1.15
"	49	"	4	"	1.66 x 1.18
"	16	"	3 and 2	"	1.61 x 1.13

It will be at once seen that the sets of four average largest, and that the sets of five average precisely the same as the total average of all the eggs measured (this number is without doubt the most normal clutch of *americanus*). The slight increase in the average of the sets of six can readily be explained. In the first place it has been shown that the sets of this number of eggs were all collected very early in the season, and that the supposition is that they were from the most hardy and vigorous birds; and again such clutches are more frequent in the North and West, where all eggs average larger. The sets of two and three eggs each, which were mostly collected late in the season, are probably second or third clutches

of birds that had lost their previous sets, or from aged birds whose productive powers are waning.

In the foregoing summary, no account has been taken of abnormalities or monstrocities. The latter are by no means common, and with the species under consideration, very rare indeed. The "runt" egg which comes under this head, has been attributed to the exhaustion of the productive organs of the female, after producing an unusually large number of eggs, the final egg being not only unnaturally small, but infertile as well. The smallest egg of this species on record was taken by Mr. I. C. Green, Amherst, Mass., with three eggs of the normal size. It contained no yolk, and measures *1.19x.95*, which is somewhat smaller than the egg of a Saw-whet Owl.

Contour.—Coues, in his *Birds of the Northwest*, says: "In measuring many hundred eggs I have noticed that the variation, however great, is less in absolute bulk than in contour." In view of this it would appear to me that the true and most accurate method, were it practicable, of comparing a large series of eggs with that of another, would be to ascertain the capacity of each and every shell of the species. Whether the result would justify the extra time, risk, and skill employed, I am unable to say. The eggs of the Crow are usually ovate, often running from short ovate to elongate ovate, and less often from short ovate to ovate, in a clutch. Cylindrical ovate and ovate pyriform are very rarely met with in eggs of this species, and oval and spherical only in abnormal specimens, which are frequently if not always infertile. In a set of two eggs taken by Mr. J. C. Brown, Carthage, Mo., May 1, 1893, one egg is of the usual size and shape, the other is almost spherical, measuring *1.43 x 1.38*. To the eye, this egg would appear perfectly round. This set is now in the collection of Mr. J. Warren Jacobs.

Color. — In my oological collection, I have a series of sets of the American Crow, from Connecticut, Northern New York, Southern Michigan, Minnesota and Manitoba, nearly all of which can be readily separated from my North Carolina, California, Kansas, and Pennsylvania series by reason of their very dark ground color or heavy markings. The Northern eggs, with some exceptions, exhibit a ground of French- bice- chromium- or pea-green, variously spotted and blotched. For Pennsylvania a very light malachite-, chromium- or glaucous-green, are the usual colors, with an occasional set or single of a bice- French- or pea-green, or more often of an indescribable greenish-grey or faded nile-blue. Eggs from more Southern sections appear even lighter and with fewer dark sets. I have never yet found the "sea green" ground color so often given in the standard works as the typical color of the egg.

The lack of a standard color chart, or possibly in the majority of cases, the absence of any guide whatever other than the eye and the describer's own personal ideas of colors, alone prevents me from tabulating the notes in some form or other, for they are very voluminous and bear evidence of much labor and care. A straw will show the way the wind blows however, and the descriptions emphasize my former remarks under this heading.

That "there is no honor among thieves," is an old saying, yet the Crow has no enemy worth considering that is notoriously addicted to robbing her nest, and protective coloration can have no special significence to any of the genus; and if it were so, the bulky nest would prove an effectual bar to any such hypothesis. We will have to look further for an explanation of the color phenemena. Dr. M'Aldowie in his admirable *Observations on the Development and Decay of the Pigment Layer on Birds's Eggs*, says, "All organic objects which are liable to be exposed to the sun's rays are protected by one color or other." While this may be and probably is true, with a number of exceptions; yet why do the eggs of so many widely distributed species, and the one under consideration in particular, exhibit the heaviest and deepest colors in the more northern portion of their breeding range? That the sun is much more powerful near the equator, no one will question. Admitting that the bird has no power over the color of its eggs, it would appear that the more southern egg would require the most protection and the "survival of the fittest" would have obliterated all pale specimens long ago. The nest is seldom shaded on account of its high position. I have often noted that the brooding bird flies directly away from the sun when unexpectedly startled, and always appears to keep her head directly opposite the sun when sitting, on a warm, sunshiny day. While the tropical and sub-tropical *avianfauna* contains the most gorgeous and richly plumaged species, the eggs are by no means colored in proportion. The leaves probably afford more protection in the South in most cases, but not always; an evergreen affords like conditions where-ever found.

It is obvious to me that the climatic conditions of the North have more influence over the color and coloration by reason of the sudden changes in the temperature from warm to cold, than that of the heat alone; and in lieu of a thicker shell, the pigment is used more liberally, the more robust constitution of the bird rendering this, as well as the production of a larger egg, possible.

Coloration.—While the average writer may describe the ground color of an egg fairly well, if he has a "Standard Nomenclature of Colors," we all frequently fail to give the reader a clear conception of the coloration.

The Crow egg is particularly difficult to describe ; it is only by close study that the beauty of an egg becomes apparent, a typical egg appearing a dirty olive-brown or olive-green, at a passing glance. The pattern may consist of but one pigment, but that being semi-transparent, the numerous spots and blotches of deep brown are transformed into various olives and the shell markings into greys and dull purples. I have never fully understood these same "shell markings." The same tints are evident in the shells of many other eggs, with varying degrees of brightness, seemingly making no difference whether the shell be white or colored. In my succeeding remarks I will describe the coloration as it appears to the eye.

The usual markings are in the shape of spots and blotches, often so thick as to cover the ground color, usually heaviest at the larger end. Sometimes a set will contain eggs totally unlike in color and markings. Usually the first egg deposited is the most heavily marked and the last egg comparatively lightly marked, often almost spotless. Rarely an egg or set of eggs will be found without a spot or blotch. Such a set is described by me under the head of Descriptions of Sets, and a similar set may be found in the magnificent collection of J. Parker Norris. Rev. P. B. Peabody and others, mention "spotless blue" eggs, but the notes are very meagre. The primary cause of such eggs is undoubtedly that of over-production. The female, by producing an unusual number of eggs, exhausts the contents of the color ducts. The usual markings are of olive-green, olive, and olive-brown, with shell markings of various greys and dull purples. Mr. Stephen J. Adams describes an egg colored exactly like a typical egg of the Red-winged Blackbird (*Agelaius phœniceus*), but of the average size. Others describe specimens with the coloration in streaks and scrawls. Mr. Samuel L. Bacon gives an example of the similarity of successive sets of eggs laid by the same bird : "I have in my collection two sets of eggs, the similarity of which makes them remarkable. Each set contains four eggs, and I am sure this was the full complement in both cases. The eight eggs are of one size and shape, all being a little shorter and more pointed at smaller ends than is usually the case with Crows' eggs. Each set contains three dark-green eggs and one of a light blue color, with olive markings few and far between. Now these sets were taken from elms (within fifty feet of each other) in an open farming country, and as no leaves were on the trees they could be seen for miles. The first set was taken April 28, 1890, and the second set April 22, 1892, a lapse of two years. To my mind these were laid by the same bird ; but as I unfortunately shot her when she left the second nest, I will never get the set in triplicate." I could give further instances in support of this theory, but consider the above sufficient.

Selected eggs of *Corvus americanus* cannot be distinguished by an expert from those of *caurinus* or *ossifragus;* but there is little danger of any but the most ignorant or dishonest persons confounding the separate species. The same may be said in relation to *C. corax principalis*, and *cryptoleucus*. Some very large and richly marked specimens collected in Minnesota and described by Mr. Walton Mitchel, closely resemble the eggs of the Raven ; for instance : "Five eggs. Dark green, spotted with purple and brown, some eggs having blotches on the large ends as large as .90 x .60. Eggs : 1.80 x 1.31, 1.80 x 1.26, 1.79 x 1.28, 1.75 x 1.25, 1.74 x 1.27. Five eggs. Dark green, very heavily marked with lilac-brown and dark purple. 1.94 x 1.40, 1.90 x 1.35, 1.89 x 1.36, 1.89 x 1.38, 1.85 x 1.36. Four eggs. Three eggs light green, spotted with dark brown and purple. One egg, dark green, very sparsely spotted. 1.78 x 1.27, 1.78 x 1.26, 1.74 x 1.22, 1.70 x 1.20." Mr. Frederick M. Dille, says : "Several sets of their eggs will not show as great a variation in color and markings as will sometimes the various eggs in a particular set. In this respect the eggs of the Raven differ, all the eggs in any one set resembling each other very closely. With little difficulty, however, a series of eggs of the American Crow could be obtained which would be very interesting on account of their variation." It is altogether impossible for me to attempt to give an intelligible description of all the variations in the patterns and the coloration of the eggs of this species. Therefore I shall only give a few of the best descriptions, selected more for their variations than for the locality in which they may have been found.

Descriptions of Sets.—The collectors of the various sets are in all instances the describers of their respective sets, unless otherwise stated.

Set I.—May 29, 1887. Berwyn, Chester Co., Pa. Collected by F. L. Burns. 5 eggs. Ground color, an indescribable greyish-green, *unspotted*. Ovate. Three eggs hatched, the remaining two measure 1.54 x 1.16, 1.56 x 1.14.

Set II.—April 15, 1891. Yakima Co., Wash. Collected by W. L. Dawson. 5 eggs. Ground color, an indefinite light greyish-blue, boldly marked with well-defined blotches of dark hair-brown, overlaid with fewer blotches of burnt umber, the blotches of both colors becoming larger about the larger ends ; there are a few points of black also. The ground color is not very much obscured except at larger ends. This set is remarkably uniform in coloration. 1.69 x 1.14, 1.71 x 1.16, 1.69 x 1.14, 1.64 x 1.12, 1.66 x 1.16 (Described by Lynds Jones.)

Set III.—April 3, 1893. Shabbona, DeKalb Co., Ill. Collected by W. L. Dawson. 6 eggs. Light bluish-white. General appeareance, wood-brown. No. 1. Lilac : moderate blotches, extremely scarce.

Browns : clove and chestnut, in blotches, lines and splashes, very bold and plentiful, larger at large end, otherwise evenly distributed. No. 2. Same, but lilac in spots and blotches less scarce. Light clove-brown markings evenly distributed. Ground color very prominent. No. 3. Same as No. 1, but markings run together, with less clove-brown. Ground color indistinct. No. 4. Same as No. 3, but markings more streaky. No. 5. Same as No. 1, but heaviest at small end. No. 6. Same as No. 1. 1.78 x 1.17, 1.71 x 1.15, 1.75 x 1.19, 1.73 x 1.14, 1.72 x 1.16, 1.82 x 1.15. (Described by Lynds Jones.)

Set IV.—April 3, 1893. Shabbona, DeKalb Co., Ill. Collected by W. L. Dawson. 4 eggs. Light bluish-grey. General appearance, brownish-slate. No. 1. Lilac and lavender in dots, spots and small blotches at smaller end, plentiful in bold blotches and washes at large end, edges of markings ill-defined. A few black markings at large end. No. 2. Same, but lilac and lavender in much heavier pattern and more abundant, nearly hiding ground color and forming a great blotch on large end. No. 3. Same as No. 1, but markings less heavy. No 4. Same as No. 3, but browns more plentiful and edges well defined; markings confluent at large end only. Black in lines and spots on large end, plentiful. 1.70 x 1.20, 1.76 x 1.21, 1.86 x 1.17, 1.69 x 1.20. (Described by Lynds Jones.)

Set V.—April 7, 1893. Shabbona, DeKalb Co., Ill. Collected by W. L. Dawson. 2 eggs. Ground color obscured, appears to be light blue-grey. No. 1. Lavender and chestnut-brown in small oblong blotches, very uniform. No. 2. Same, but in addition, bold blotches of clove-brown at each end, confluent at large end 1.70 x 1.15, 1.75 x 1.17. (Described by Lynds Jones.)

Set VI.—April 27, 1890. Lansingburg, N. Y. Collected by Harvey C. Campbell. 5 eggs. Nos. 1 and 2. Pale greenish-blue, speckled with olive-green and underlined with lavender-grey. Nos. 3 and 4. Ground color darker, thickly marked with spots and blotches of olive-green intermingling with cinerous. No. 4 has the addition of mouse-grey in splashes at larger end. 1.54 x 1.14, 1.60 x 1.13, 1.67 x 1.11, 1.57 x 1.15.

Set VII.—April 7, 1893. Shabbona, DeKalb Co., Ill. Collected by W. L. Dawson. 3 eggs. Ground color pale greenish-blue. General appearance speckled green. Nos. 1 and 2. Lavender spots and dots very numerous, bold blotches and wide heavy splashes not very numerous. Clove-brown in small blotches and bold splashes, not very numerous. All markings uniformly distributed No. 3. Same, but with larger markings more numerous at large end. 1.65 x 1.15, 1.60 x 1.13, 1.83 x 1.23. (Described by Lynds Jones.)

Set VIII.—May 1, 1893. Carthage, Mo. Collected by John C. Brown.

2 eggs. Pale bluish-green, with yellowish tinge. The normal specimen has bold blotches of greyish-brown, and small spots of deep shades of brown, chiefly at large end. The abnormal egg is almost round and marked with same colors, which are thickest in clusters on each end. 1.56 x 1.22, 1.43 x 1.38. (Described by J. Warren Jacobs.)

Set IX.—April 14, 1873. Waynesburgh, Green Co., Pa. Collected by J. Warren Jacobs. 5 eggs. Light bluish-green. Nos. 1, 2 and 3. Very heavily marked, but chiefly at larger ends, with yellowish-drab, brown and slate. No. 4. Same colors moderately distributed. No. 5. Almost devoid of markings. 1.95 x 1.15, 1.91 x 1.18, 1.86 x 1.19, 1.66 x 1.15, 1.78 x 1.19.

Set X.—April 29, 1893. Amherst, Mass. Collected by I. C. Green. 5 eggs. Ground color very light green in two eggs, darker in the remainder. Spotted and blotched with olive, brown and lilac, very thickly. 1.63 x 1.09, 1.50 x 1.07, 1.58 x 1.12, 1.59 x 1.14, 1.52 x 1.11.

Set XI.—April 30, 1890. Tredyffrin Twp., Chester Co., Pa. Collected by F. L. Burns. 4 eggs. Eggs very small. Light nile-blue, almost light glaucous-green, with small shell markings of drab, smoke and olive-grey. Spotted and blotched with olive-green, olive-brown, and a few specks of clove-brown chiefly at larger ends. Ovate. *1.53 x 1.09, 1.52 x 1.10, 1.53 x 1.07, 1.47 x 1.08.*

Set XII.—April 10, 1889. Grinnell, Ia. Collected by Lynds Jones. 4 eggs. Light nile-blue. No. 1. Very heavily and uniformly overlaid with bold markings of wood- and hair-brown, the latter predominating. No. 2. Less heavily overlaid with same colors in smaller pattern, blotches largely confined to larger end; also two large blotches of black at larger end, and numerous small ones evenly distributed over the entire surface. No. 3. Markings very sparce and vague, chiefly of wood-brown, here and there assuming a streaky appearance. No. 4. Markings very sparse and almost entirely streaky, of a pale wood-brown, a blotch of hair-brown at the extremity of a streak here and there, looking as if a drop of color had dried on after staining the shell in the streak. 1.71 x 1.16, 1.70 x 1.17, 1.54 x 1.18, 1.42 x 1.10.

Set XIII.—April 18, 1893. Grinnell, Iowa. Collected by Lynds Jones. 6 eggs. Type specimen: very light nile-blue, thickly overlaid with small blotches of wood-brown, and lavender shell markings scarcely discernible; the whole overlaid with large, well-defined blotches of hair-brown; all markings evenly distributed, giving the egg a greenish-brown appearance. Two other eggs heavily blotched with same colors. Two other eggs have relatively but few of the inner blotches and shell markings, hair-brown being the principal color. Last egg sparsely marked, a few

large blotches at larger end, ground color very prominent. 1.74 x 1.20, 1.70 x 1.20, 1.66 x 1.20, 1.66 x 1.19, 1.65 x 1.16, 1.65 x 1.15. Eggs uniformly ovate, a very little elongate.

Set XIV.—April 25, 1892. Oberlin, Ohio. Collected by Lynds Jones. 5 eggs. Type specimen very light nile-blue, with a few small markings of wood-brown and lavender, these very heavily overlaid with great blotches of wood- and hair-brown in about equal quantity and size. Many of these blotches are .20 x .60. There are three eggs of this type. No. 4. Much the same but the blotches are smaller and more indefinite. No. 5. Very much lighter, with very few small markings or large blotches except at larger end; and with more lilac shell blotches, sparsely and evenly distributed. Nos. 1 to 4 are almost ovate pyriform, while No. 5 is almost elongate ovate. 1.79 x 1.19, 1.74 x 1.20, 1.73 x 1.20, 1.72 x 1.20, 1.71 x 1.19.

Set XV.—April 30, 1891. Yakima Co., Wash. Collected by W. L. Dawson. 5 eggs. Light nile-blue. Type, evenly distributed dots and spots of wood-brown and blotches of same and hair-brown, sparsely sprinkled with black dots, all markings having clear-cut edges, and the ground color conspicuous. Nos. 2 and 3. Much more heavily marked with a uniform wood-brown, these markings having a streaky appearance, looking as if they had been rubbed from large end down while still damp; this peculiar pattern is confined to the middle regions. No. 2 has a large triangular and several small irregular lines of dark clove-brown immediately above the pole of the large end. No. 3 has only faint traces of the color in a few indefinite lines and spots over the entire egg. No. 4. Very sparsely with small and indefinitely defined markings of wood-brown, with black dots scattered evenly over the egg, and a great irregular broken *raised* blotch of black on larger end, which looks like dried tar. No. 5 is very evenly marked with well defined but small blotches of lavender under the wood-brown, giving it a clean freckled appearance. 1.73 x 1.20, 1.61 x 1.19, 1.60 x 1.18, 1.62 x 1.22, 1.57 x 1.19. (Described by Lynds Jones.)

Set XVI—April 14, 1886. Valley Forge, Montgomery Co., Pa. Collected by F. L. Burns. 4 eggs. Palest possible tint of glaucous-green. No. 1. Regularly, almost completely over-laid with olive-green, heaviest at larger end; a few specks of clove-brown noticeable. No. 2. Regularly spotted and blotched with olive-green, heaviest at smaller end, a few specks of clove-brown and some olive-grey shell markings noticeable. No. 3 has the most olive-grey shell markings of any of the set. It is lightly spotted and blotched with olive-green. No. 4 is similar to No. 3, but more sparingly marked. This set gradates from heavy to light markings. Ovate. 1.54 x 1.12, 1.59 x 1.15, 1.51 x 1.11, 1.53 x 1.13.

Set XVII.—April 30, 1891. Bradford Hills, Chester Co., Pa. Collected by F. L. Burns. 4 eggs. Light glaucous-green, spotted, blotched and smeared with olive-green and clove-brown. No. 2 shows shell markings of olive-grey. Ground color shows but indistinctly. Ovate. 1.75 x 1.15, 1.66 x 1.17, 1.75 x 1.11, 1.66 x 1.10.

Set XVIII.—April 30, 1890. Phœnix, N. Y. Collected by Claude Cornelle Maxfield. 3 eggs. Nos. 1 and 2. Light glaucous-green, spotted and blotched with olive-green, olive-brown, and a few scratches of clove-brown about large ends. A few shell markings of mouse-grey are noticeable here and there. No. 3. Light nile-blue, almost unmarked, except at large end; here blurred shell markings of mouse-grey, with a few small spots of clove-brown and black are scattered over the surface. The texture of the shell is rough, porous and dull. Elongate ovate to ovate. 1.56 x 1.15, 1.59 x 1.18, 1.61 x 1.06. (Described by F. L. Burns, from eggs kindly loaned by C. C. Maxfield.)

Set. XIX.—May 9, 1892. Poynette, Wis. Collected by A. Mowbray Semple. 6 eggs. Five eggs light sea-green. No. 6. *White:* marked with umber in spots from the size of a pin head to double that size. Five eggs average 1.68 x 1.20, the 6th egg 1.65 x 1.15.

Set XX.—April 20, 1890. Lansingburgh, N. Y. Collected by Harvey C. Campbell. 5 eggs. No. 1. Light sea-green. Covering the entire egg are spots, dots and longitudinal markings of olive-green, thickest at larger end. The four remaining eggs are a shade lighter. No. 2. Blotched and spotted with clove-brown, olive-green and mouse-grey. Nos. 3, 4, and 5 are spotted and blotched with olive-brown and olive-green. 1.63 x 1.12, 1.76 x 1.15, 1.70 x 1.16, 1.71 x 1.16, 2.01 x 1.25.

Set XXI—April 26, 1890. Lansingburgh, N. Y. Collected by Harvey C. Campbell. 6 eggs. This is the handsomest set of Crows' eggs I have ever seen. The ground color of Nos. 1, 2, and 3 is light sea green, almost malachite-green. The markings are large and irregular in shape, more properly called blotches. No. 1. The markings are numerous and evenly distributed over the entire surface, except a large blotch at the larger end, crescentic in shape and measuring about .80 in length. These markings are of clove-brown, with smaller markings of olive-green or olive-brown. No. 2. Similar to No. 1, but the blotches are not so large, yet almost blending in one large blotch at larger end. There are some longitudinal markings resembling pencil lines, of a light olive. No. 3. Same as the above with the addition of a circular blotch, .45 in diameter, at larger end. The pencil-like markings are more numerous than on No. 2. No. 4. Sage-green, sprinkled sparsely with small blotches of olive-green, underlying this are spots and blotches of cinereous, more numerous

at large end. No. 5. Lighter than first three eggs, sparsely spotted and blotched with olive-green, except at larger end where they cluster together. There is one large blotch of mouse-grey at larger end, entirely concealing the ground color. Some blotches of cinereous are scattered over the surface. No. 6. Darker than the first three eggs, blotched and spotted with clove-brown and olive-green. First three eggs resemble each other closely, the remaining three are entirely different from one another, and from the first three eggs. 1.65 x 1.07, 1.64 x 1.08, 1.64 x 1.11, 1.60 x 1.09, 1.47 x 1.11. (6th egg broken.)

Set XXII.—April 17, 1892. Lansingburgh, N. Y. Collected by Harvey C. Campbell. 5 eggs. 4 eggs light sea-green, thickly *clouded* with small markings of olive-green, olive-brown and mouse-grey. No. 5. Pale bluish, marked sparingly with olive-green, bistre, cinereous, and several minute dots of lilac-grey. 1.68 x 1.12, 1.66 x 1.16, 1.58 x 1.11, 1.55 x 1.10, 1.55 x 1.11.

Set XXIII.—May 2, 1892. Centre Rutland, Vt. Collected by Wait C. Johnson. 2 eggs. No. 1. Light sea-green, spotted with dark-brown. No. 2. Rather unique; light olive-green, with few spots at small end, but the ground color on large end almost obscured by blotches of deep brown, almost black. Three of these blotches are about the size of dimes. 1.62 x 1.12, 1.70 x 1.19.

Set XXIV.—April 16, 1893. Boone Co., Iowa. Collected by Carl Fritz Henning. 5 eggs. This is a pretty set and shows a variety of markings. One egg is light sea-green, heavily blotched at larger end with light-brown, olive-brown and umber. No. 5 is a darker egg, blotched all over the larger end with dark and olive-green, and dotted with umber and black. The remaining three eggs are between the light and dark ground colors, heavily marked over the entire eggs with brown and umber. 1.67 x 1.16, 1.71 x 1.15, 1.60 x 1.17, 1.70 x 1.13, 1.68 x 1.17.

Set XXV.—May 12, 1893. St. Paul, Minn. Collected by Walton Mitchell. 6 eggs. Five eggs light sea-green, heavily spotted with brown and purple; one egg light blue, one large blotch of brown and a few purple markings on the large end. 1.56 x 1.20, 1.60 x 1.27, 1.60 x 1.27, 1.62 x 1.30, 1.62 x 1.29, 1.65 x 1.30.

Set XXVI.—April 10, 1886. Tredyffrin Twp., Chester Co., Penn. Collected by F. L. Burns. 5 eggs. No. 1. Malachite-green, spotted and blotched with olive-green and olive-brown. No. 2. Chromium-green, marked similarly to No. 1; a few shell markings of drab-grey noticeable. No. 3. Light glaucous-green, with a few shell markings of drab-grey; spotted and blotched with olive-green, olive-brown, and a few small spots and dashes of clove-brown at large end over all. No. 4.

Malachite-green, with olive-grey markings in large pattern, becoming confluent at and around small end ; only partly overlaid with olive-green, olive-brown, and some clove-brown. A very handsome egg. No. 5. Light nile-blue, almost unspotted, save the larger end, which shows a few shell markings of olive-grey, some spots and one large blotch of olive-brown and less clove-brown. This set is unique and beautiful. Ovate and elongate ovate. 1.76 x 1.18, 1.68 x 1.21, 1 69 x 1.22, 1.76 x 1.25, 1.57 x 1.23.

Set XXVII.—April 22, 1887. Diamond Rock, Chester Co., Penn. Collected by F. L. Burns. 6 eggs. 5 eggs light malachite-green, a few dots and spots of olive-grey shell markings, thickly freckled with olive-green, olive-brown, and at larger ends with clove-brown. No. 6. Light nile-blue, sparsely flecked with the above colors. Elongate ovate. 1.78 x 1.14, 1.75 x 1.12, 1.77 x 1.20, 178 x 1.13, 1.70 x 1.16, 1.75 x 1.08.

Set XXVIII.—March 30, 1889. Hammer Hollow, Chester Co., Penn. Collected by F. L. Burns. 5 eggs. This is a typical set. Ground color light malachite-green, with spots and blotches of olive-green, olive-brown, and clove-brown. All markings clear and pronounced, most numerous at large ends. Ovate to elongate ovate. 1.79 x 1.18, 1.75 x 1.20, 1.70 x 1.15, 1.77 x 1.15, 1.67 x 1.19.

Set XXIX —May 9, 1890. Mt. Airy, Chester Co., Penn. Collected by F. L. Burns. 3 eggs. Very light malachite-green, markings small, numberless, and indistinct, ground color showing prominently. There are numerous shell markings of cinereous, olive and smoke-grey. Spotted with olive-green, olive-brown and a few specks of clove-brown. Elongate ovate. 1.64 x 1.01, 1.64 x 1.00, 1.64 x 1.07.

Set XXX.—April 24, 1893. Easttown Twp., Chester Co., Penn. Collected by F. L. Burns. 5 eggs. A remarkable set in shape and measurements. 4 eggs light malachite-green, with some shell markings of drab-grey ; spotted and blotched with olive-green, olive-brown, and a little clove-brown. The markings confluent at the large ends only. No. 1 has blotch of olive-green, partly overlaid with olive-brown, at large end. This blotch is one inch in diameter, and is partly overlaid with a network of black. No. 5. Light glaucous-green, with small markings of heliotrope, purple and lavender ; spotted and blotched with well defined markings of olive-green and olive-brown. *Cylindrical* ovate. *2.06 x 1.12, 2.01 x 1.15, 1.94 x 1.13, 1.75 x 1.10, 1.82 x 1.15.*

Set XXXI.—April 9, 1893. Weaverville, N. C. Collected by I. S. Cairns. 4 eggs. Nos. 1 and 2. Pale malachite-green, blotched and spotted with mouse- and olive-grey ; overlaid with sepia and bistre, chiefly at large ends where the color becomes confluent. Nos. 3 and 4.

Dull pea-green. No. 3, regularly and sparsely covered with hair-, wood- and clove-brown markings. No. 4 has the appearance of being smeared with clove- and olive-brown about larger end; remainder of egg unspotted, with the exception of some minute dots of the same colors. The surface of this egg is rough and ridgy. Ovate. 1.68 x 1.20, 1.62 x 1.21, 1.59 x 1.18, 1.71 x 1.16. (Described by F. L. Burns.)

Set XXXII.—April 6, 1892. Weaverville, N. C. Collected by I. S. Cairns. 5 eggs. From light malachite- to light glaucous-green. 3 eggs thickly spotted with olive-green and clove-brown, but the ground color showing prominently. No. 4. Shell markings of olive-grey, very sparsely spotted with olive-green. No. 5. Mouse-grey shell markings, very numerous about smaller end; with a sprinkling of clearly defined spots of olive-green. Ovate. 1.60 x 1.14, 1.57 x 1.14, 1.60 x 1.12, 1.57 x 1.09, 1.52 x 1.13. (Described by F. L. Burns.)

Set XXXIII.—April 6, 1893. Weaverville, N. C. Collected by I. S Cairns. 5 eggs. From a light glaucous-green to a pale pea-green. Rather sparsely spotted and blotched with olive-green and olive-brown, some mouse-grey markings appearing beneath. Ovate. 1.68 x 1.21, 1.69 x 1.19, 1.69 x 1.18, 1.65 x 1.19, 1.59 x 1.17. (Described by F. L. Burns.)

Set XXXIV.—May 22, 1892. Meeker Co., Minn. Collected by Herman Hershey. 5 eggs. Malachite-green. Nos. 1 and 2, have shell markings of mouse-grey and cinereous, almost completely overlaid with blotches and longitudinal streaks of olive-green, sage-green, and a few minute markings of clove-brown noticeable at larger ends. Nor. 3, 4 and 5. Numerous shell markings of mouse-grey and cinereous, distinct and not overlaid with color; spotted and blotched with olive-green, olive-brown, and clove-brown in larger spots than on first two eggs. Ovate. 1.65 x 1.17, 1.61 x 1.18, 1.55 x 1.17, 1.54 x 1.16, 1.60 x 1.20. (Described by F. L. Burns.)

Set XXXV.—April 1, 1893. Coffeyville, Kan. Collected by George N. Upham. 5 eggs. Nos. 1, 2 and 3. Light green, streaked with olive-green and olive-brown. No. 4. Light green, blotched at larger end, especially with dirty brownish-green. No. 5. Light bluish-green, thickly spotted at large end with olive-green and lilac; the remainder of the egg spotted with lilac shell markings. I never saw a Crow egg like it; it looks like a Magpie's egg. The last two eggs measure 1.77x1.24, 1.75x1.15.

Set XXXVI.—May 2, 1885. Weed Co., Colo. Collected by Frederick M. Dille. 6 eggs. Bright light-green, but marked in such various patterns and degrees of intensity as to produce quite a variation in the set. One of the eggs is marked throughout with large dark spots; another with smaller blotches of two shades of brown, gathered around larger

end ; while two of the eggs are so streaked and smeared with brown as to almost hide the ground color. 1.63 x 1.16, 1.65 x 1.15, 1.68 x 1.15, 1.66 x 1.17, 1.67 x 1.16, 1.60 x 1.17.

Set XXXVII.—April 30, 1891. Bradford Hills, Chester Co., Penn. Collected by F. L. Burns. 4 eggs, but only 2 saved. Ground color pea-green. No. 1. Thickly spotted and blotched with olive-green and olive-brown. No 2. Several large shell markings of drab- and olive-grey, overlaid with spots and blotches of olive-green, olive-brown, and a few scrawls of clove-brown at small end. Ovate to elongate ovate. 1.81 x 1.21, 1.68 x 1 21.

Set XXXVIII.—April 19, 1886. Berwyn, Chester Co., Penn. Collected by F. L. Burns. 4 eggs. 2 eggs light bice-green, and two light chromium-green, thickly speckled and spotted with olive-green, some olive-brown, and a few shell markings of olive-grey. Elongate ovate. 1.80 x 1.17, 1.79 x 1.20, 1.77 x 1.17, 1.77 x 1.17.

Set XXXIX.—April 14, 1893. Sonoma Co., Cal. Collected by Henry W. Carriger. 5 eggs. 3 eggs light bice-green, very thickly spotted and blotched with olive-green and olive-brown. No. 4. Very light malachite-green, spotted and blotched with olive-green and olive-brown. No. 5. Light nile-blue, with faint shell markings of mouse- and drab-grey, sparsely overlaid with spots of olive-green and olive-brown. Ovate. 1.60 x 1.17, 1.61 x 1.17, 1.56 x 1.16, 1.54 x 1.15, 1.57 x 1.14.

Set XL.—May 5, 1893. Westbrook, Me. Collected by Arthur H. Norton. 1 egg. Pea-green, heavily blotched with olive, irregular in distribution, but chiefly at larger end ; also pencilings and spots of black at large end. 1.78 x 1.22

Set XLI.—April 10, 1886. Valley Forge, Montgomery Co., Penn. Collected by F. L. Burns. 5 eggs. No. 1. Chromium-green, a few shell markings of olive- and mouse-grey, overlaid with olive-green, olive- and clove-brown. No. 2. Light bice-green, marked heavier than the above with the same colors. No. 3. Pea-green, same as the above, but has a more streaky appearance. Nos. 4 and 5. Lightest possible tint of glaucous-green, with colors of No. 1 in streaks and dashes, pattern rather indistinct. Elongate ovate, 1 75 x 1.11, 1.74 x 1.11, 1.64 x 1.11, 1.74 x 1.13, 1.68 x 1.06.

Set XLII.—April 20, 1889. Berwyn, Chester Co., Penn. Collected by F. L. Burns. 5 eggs. A very pretty set. 2 eggs light chromium-green, with shell markings of mouse-, drab- and olive-grey, confluent at larger end in one and at smaller end in the other ; overlaid with olive-green and olive-brown. Where the grey clusters thickest, it is overlaid with small spots and scrawls of clove-brown. Nos. 3 and 4. Light glaucous-green,

with shell markings of mouse. and olive-grey, overlaid with spots and blotches of olive-green and brown, a few spots of clove-brown at large end. Markings every where bold and distinct. Ovate. 1.73 x 1.24, 1.63 x 1.24, 1.72 x 1.23, 1.72 x 1.24.

Set XLIII.—April 23, 1893. Ransom, Mich. Collected by E. Arnold. 1 egg. Chromium-green. Spotted and blotched with olive-green and olive-brown. Ovate. 1.69 x 1.20. (Described by F. L. Burns.)

Set XLIV.—April 23, 1892. Cayuga Co., N. Y. Collected by John Minchin. 5 eggs. No. 1. Chromium-green, with olive- and smoke-grey shell markings, very heavy and confluent over the large end; heavily overlaid with olive-green markings. No. 2. Bice-green with same markings. No. 3. Bice-green, blotched and spotted heavily with olive-green and some clove-brown. Nos. 4 and 5. French-green, heavily marked with olive-green, overlaid with blotches of olive-brown and specks of clove-brown. A very dark set. Almost sub-pyriform. 2.03 x 1.33. 1.72 x 1.16, 1.68 x 1.14, 1.65 x 1.16, 1.68 x 1.12. (Described by F. L. Burns.)

Set XV.—April 23, 1893. Ransom, Mich. Collected by E. Arnold. 4 eggs. 3 eggs French-green, blotched and spotted with olive-green, overlaid with heavy markings of clove-brown. No. 3. Showing a few shell markings of olive-grey. General appearance is bottle-green. No. 4. Light glaucous-green with numerous shell markings of olive-grey, sparsely spotted and blotched with raw-umber and clove-brown. 1.77 x 1.21, 1.73 x 1.23, 1.68 x 1.21, 1.58 x 1.21. (Described by F. L. Burns.)

Set XLVI.—May 7, 1893. Ransom, Mich. Collected by E. Arnold. 5 eggs. 4 eggs light French-green, with shell markings of olive-grey; thickly and evenly spotted and blotched with olive-green, olive- and clove-brown. No. 5. Glaucous-green, with olive-grey shell markings, spotted and blotched with olive-green, olive- and clove-brown, principally at large end. 4 eggs very dark, one light. Ovate. 1.70 x 1.21, 1.69 x 1.22, 1.70 x 1.21, 1.70 x 1.22, 1.71 x 1.21. (Described by F. L. Burns.)

Set XLVII.—May 5, 1893. Clear Creek, Jefferson Co., Colo. Collected by Frederick M. Dille. 6 eggs. Ground color intense green (French-green). Markings heavy and distinct of olive-green and brown. One egg streaked and one marked around smaller end. 1.60 x 1.12, 1.62 1.12, 1.64 x 1.17, 1.59 x 1.13, 1.72 x 1.14, 1.65 x 1.14.

Set XLVIII.—April 21, 1891. Lansingburgh, N. Y. Collected by Harvey C. Campbell. 5 eggs. 4 eggs sage-green, clouded heavily with olive-grey and spots of olive-green. No. 5. Pale bluish-green, thickly spotted and blotched with olive-green, olive-brown and mouse-grey. 1.67 x 1.14, 1.69 x 1.13, 1.54 x 1.14, 1.64 x 1.12, 1.70 x 1.14.

Set XLXI.—April 17, 1892. Lansingburgh, N. Y. Collected by Harvey

C. Campbell. 4 eggs. No. 1. Sage-green, profusely marked with longitudinal streaks of olive-green, and one or two dots of clove-brown at larger end. No. 2. A trifle lighter in ground color, marked with large blotches of olive-green and olive-brown, with smaller spots of same colors. One blotch is 1.05 in length running lengthwise of the egg. No. 3. Lighter than No. 2 and marked the same. No. 4. Same as No. 3, with addition of mouse-grey. 1.71 x 1.17, 1.71 x 1.17, 1.64 x 1.17, 1.69 x 1.15.

Set L.—April 9, 1893. Boone Co., Iowa. Collected by carl Fritz Hemming. 5 eggs. 3 eggs dark olive-green, thickly spotted and blotched with dark-brown and fine blotches and dots of black; one of the three evenly marked, another heavily blotched at the large end, and the third at the small end. The remaining 2 are a lighter olive-green, blotched with lighter brown and a few black dots, chiefly at the larger end. 1.54 x 1.15, 1.67 x 1.13, 1.55 x 1.17, 1.55 x 1.16, 1.56 x 1.14.

BULLETIN No. 5.—Supplement.

It is with great pleasure that we are able to publish this BULLETIN, reporting the results of the investigations by the committee under Mr. F. L. Burns. Any comments upon the merits of the report would be superfluous here. It speaks for itself.

An amendment has been properly presented to Article XV. of the Constitution, which proposes to relieve the Secretary of the handling of dues and assessments, and puts this duty into the hands of the Treasurer. Adverse votes upon the amendment must be sent to the Secretary, Mr. J. E. Dickinson, Rockford, Ill., before April 10th. Ballots favoring the amendment are unnecessary.

The following new names have been proposed as candidates for active membership: T. B. Tullock, Rockford, Ill. and Mrs. Agnes Chase, Chicago, Ill. Adverse votes should be sent to the Secretary.

The Treasurer's report in this BULLETIN shows a healthy condition of our finances. The early resignation of the former Secretary, makes a report of that officer impossible.

R. M. STRONG, *President.*

TREASURER'S REPORT.

FOR THE YEAR ENDING JANUARY 1ST, 1895.

RECEIVED.

Membership assessments, from Secretary	$25.00
Membership assessments, direct	15.00
For publications, from Secretary	.40
For publications, direct	2.00
For plate	.23
Total received	$42.63

PAID.

1893 printing, R. M. Strong	$6.10
Special BULLETIN of Novenber 7, 1893	1.50
Shecial BULLETIN of December 30, 1893	2.05
BULLETIN No. 1	6.75
BULLETIN No. 2	4.75
BULLETIN No. 3	7.80
Printing and postals (Secretary)	1.75
Postage on BULLETINS	5.20
Postage on back publications	.47
Total paid	$36.37
On hand	$6.26

LYNDS JONES, *Treasurer.*

A brief general statement of the Chapter's present finances should be made at this time.

In response to the call for contributions toward publishing the "Warbler" and "Crow" reports, $40.50 has been received, with the promise of about $10.00 more when the "Crow" report is issued. The books offered for sale in BULLETIN No. 4, have been sold for $9.00. Part of the *Semi-Annual* cuts have been disposed of for $4.00. This makes actual receipts to date, other than regular dues, $53.50. The two reports will cost, including mailing, about $70.00. Should the promised contributions come in, the total amount necessary to be drawn from the regular annual dues to meet the cost of these two reports, will scarcely exceed the cost of a single Chapter BULLETIN of twelve pages.

But two complete files of the Chapter publcations remain unsold. $1.00 will buy either.

The work for the year and succeeding years is now mapped out in a general way. Two Special Committees are ready for active work. Mr. F. L. Burns gives notice of his proposed investigations on the Flicker, in another place. Mr. Howard P. Mitchell, Mt. Sterling, Wis., desires to receive any notes that may now be available relating to "Nestling Down," and invites correspondence with any and all relating to the subject. Mr. J. E. Dickinson, 1122 S. Winnebago St., Rockford, Ill., is ready to mail schedules for recording the migrations of the Warblers. Mr. John A. Bryant, 912 Walnut St., Kansas City, Mo., has accepted the chairmanship of the "Song" committee, and Mr. Ned Hollister, Delavan, Wis., the chair-

manship of the "Nesting" committee. I shall do what I can with the food habits of the Warblers.

Let it be distinctly understood that this work is not confined to the coming season, but covers all past time. The object of so organizing it is not wholly to plan for future work, but as well to collect the scattered facts already recorded, in the belief that in a greater mass of material will be found the links which form a chain of facts proving many doubtful things. All notes should be as literal and exact as possible. General notes, or those lacking exactness, serve only to lend confusion to the whole system. Nothing but unquestionable facts will give us perfect confidence in the final reports.

Beginning *now*, let us ransack our note-books for what we may already have, and thus prepare ourselves for a more intelligent course of study during the coming season, as well as enabling the various committees to determine more carefully the line of work which shall result in the most valuable report.

LYNDS JONES, Oberlin, O.

Having again consented to take up a special line of study in behalf of the W. O. C., I have selected as a fit subject for special investigation the common Flicker (*Colaptes auratus*).

While so well known throughout its range, there has been no organized effort made to thoroughly investigate the habits and character of this rollicking, semi-civilized, semi-barbarous bird, although it has been made the subject of many interesting papers by specialists and bird lovers generally. Let us then by our united efforts and individual observations, endeavor to bring forth that which may be new or little known, and to correct or re-affirm that which has already been written. The reader should bear in mind that little can be accomplished without his own painstaking efforts and the hearty aid of every ornithologist this may reach. By original researches and investigations, coupled with faithful and accurate records alone, can we expect to place the result before our scientific friends with any degree of confidence.

Any thing relating to food, flight, notes, nidification, migration, plumage, hybridism, moulting, mating, relative abundance, distribution, etc., can be used. The observers are requested to give exact dates, measurements and otherwise full data, as far as possible. Full credit will be given to all contributing, and all notes, however incomplete, will be gladly received and acknowledged. The undersigned invites correspondence with all ornithologists and oologists in reference to this subject.

F. L. BURNS, Berwyn, Penn.

The committee on "Food Habits" desires information upon the general food habits of the Warblers—as to whether the species glean on the ground, in the low brush, in the middle branches of the trees, in the tree-tops, or in the air. Do any or all species seem to have a preference for certain places, or bushes, or trees for freeding? How many hours a day do they feed?

The committeee also desires special information relating to contents of stomachs, what kind of insects taken as food; kind of vegetable food, if any. Also the sort of food required by nestlings, and amount, if possible. If parent's food varies during nesting time, or at different seasons. How long the young are fed by the parents. Also any thing not given above that you may have.

LYNDS JONES.

A few errors crept into the Warbler Report, which I am glad to correct at this time. In the records from Berwyn, Penn., by Frank L. Burns, the record of an "immature female Orange-crowned Warbler," should have been changed to "immature female Tennessee Warbler." But Mr. Burns informs me that he has since taken a fine male adult Orange-crown, which holds the first county record. The Cerulean Warbler was taken at Newtown, Delaware Co., instead of Berwyn, Chester Co.

Of the records from Portland, Conn., by Mr. John H. Sage, note these corrections. Helminthophila chrysoptera, "not uncommon S. R.," instead of "not common S. R." Dendroica virens, "common T. V." Dendroica discolor, "not uncommon S. R.," instead of "not common S. R." Seiurus motacilla, "not common S. R.," instead of "not common T. V."

NOTES ON THE SUMMER RANGE

OF DICKCISSEL (*SPIZA AMERICANA*), GRASSHOPPER SPARROW (*AMMODRAMUS SAVANNARUM PASSERINUS*) AND HENSLOW'S SPARROW (*AMMODRAMUS HENSLOWII*), IN 1894 AND 1895.

BY LYNDS JONES.

In response to a call issued in 1894, by the writer, for notes on the abundance of these three species, reports were received from the following persons: G. N. Upham, Coffeyville, Kan.; S. S. Wilson, St. Joe, Mo.; J. E. Dickinson, Rockford, Ill.; V. H. Chase, Wady Petra, Ill.; J. C. Galloway, Montgomery, O.; W. E. Saunders, London, Ont.; Hubert W. Congdon, Staten Island, N. Y., and Henry R. Buck, Wethersfield, Conn.

From the notes furnished, nothing could be learned of the extreme range of either of these birds, except in the limited region of Ontario, Canada, immediately north of Lake Erie, where Dickcissel was rare, and Grasshopper Sparrow was known by a single individual—the first for the region.

From a considerable number of references kindly furnished by Mr. Henry R. Buck, it appears that Dickcissel is a regular summer resident in New England as far north as Massachusetts, being rare further north, but locally distributed. No unusual occurrences are reported for 1894. These same notes indicate that Grasshopper Sparrow is common near the east cost of Connecticut, but common only locally westward up to the Massachusetts line. Mr. Buck has found the bird to be very rare at New Haven, Conn., but abundant at Stratford, fifteen miles west of New Haven.

Mr. Hubert Wheaton Congdon has furnished me with notes from several persons, only one of whom has found Grasshopper Sparrow in New Jersey—at Bernardstown, where it is common. Another note states that it is rare on Staten Island, N. Y. Mr. Congdon says that the species is common in the Delaware Valley in Pike Co., Penn., but has never been seen across the Delaware River in New Jersey. Its local distribution is well illustrated here.

Henslow's Sparrow is rare and local in New England, judging from notes handed me by Mr. Buck. Mr. J. E. Dickinson writes that it is very

rare at Rockford, Ill. It was previously unknown at Oberlin, Ohio, but was found to be not uncommon during the summer of 1894.

In 1895 reports came from Ontario, Can., announcing the arrival of Dickcissel in considerable numbers. It was also common at Oberlin, and twelve miles north on the south shore of Lake Erie. Mr. J. C. Galloway reports it much less common at Montgomery, Ohio, than in the previous year. Mr. R. M. Strong reports that it is becoming more common each year in the vicinity of Milwaukee, Wis. It was in normal numbers in Indiana, Illinois, Iowa, and Missouri during 1895.

The encroachments of Dickcissel on territory previously unoccupied, seem to be due to an overflow from adjacent regions where it is common, and not a withdrawal from regions where it has been common. The lack of notes relating to the Grasshopper and Henslow's Sparrows makes any suggestion as to their encroachments on new localities impossible. Their sudden appearance in Lorain Co., Ohio, in 1894, remains unexplained.

The suggestion might be made : "Is it not probable that these species have always occupied the regions where they are now found for the first time, but that they have been entirely overlooked, later and more thorough field work revealing their presence?" To this I would say that in. the vicinity of Oberlin, Ohio, the actions of the birds seen the first year were very different from the actions of those seen the second year which had nested in the region the previous year. After mating they were restless, flitting about from place to place, confined to no given locality until after the time when they should have been nesting. They finally selected a place for the nest and settled down to the duties of the season. The next year the birds appeared first near their nesting place of the previous year and remained in that vicinity until after the breeding season.

It may not be genearlly known that the usual summer range of all three of these species is as far north as Minnesota, northern Ohio, to southern New England. They pass the winter in the southern states. They are birds of eastern North America, ranging west to the plains.

Those who are unacquainted with the Grasshopper and Henslow's Sparrows will do well to read what Mr. Frank M. Chapman says about them in *Birds of Eastern North America*. A short article by the writer on Grasshopper Sparrow may be found in the *Ornithologist's and Oologist's Semi-Annual*, Vol. 1, No. 2, page 8.

PRESIDENT'S REPORT.

The Wilson Ornithological Chapter enters upon another year in better condition than it has been since its birth. While there has been no great accession of members during the past year, several men have been added of whom we expect much.

During the year, the reports of two committees for special investigations have been published. Both publications, the Warbler and Crow Bulletins, have attracted enviable attention. The demand for these reports has exceeded the number of copies printed, and praise has come from some of the most prominent ornithologists of the country.

I have given Mr. Lynds Jones charge of all the special work, with power to arrange for such committees as he might see fit. It is needless for me to say anything about his qualifications for such a position. His ability and experience are well known. As president, I wish to urge upon the members the necessity of general and hearty coöperation with Mr. Jones and the chairmen of committees appointed by him. A few members have sent in admirable reports. We want more such.

Negotiations are under way toward securing an official organ, of which we stand in such great need. We hope to make an early announcement of the satisfactory completion of these negotiations, by sending to each member a copy of this official organ. It is not intended to make this organ supply the place of our Bulletin reports, but rather to serve as a means of regular communication between members.

An amendment has been properly presented, which proposes to dispense with the nominations for Vice-President, and to declare the candidate receiving the second highest number of votes for President as the Vice-President. Adverse votes should be sent to the Secretary within thirty days.

R. M. Strong, *President.*

REPORT OF THE SECRETARY.

During the year just closed, two Bulletins were published : The Crow, by Mr. Frank L. Burns, and a preliminary report on the Mniotiltidae, by Mr. Jones. An amendment to artlcle IV, section IV of the Constitution, whereby the Treasurer receives all dues and assessments direct, instead of through the Secretary, was approved.

Respectfully,

J. E. Dickinson, *Secretary.*

FROM THE SECRETARY.

Again I thank you for the honor you have conferred on me the second time, and shall try to perform my duties to your entire satisfaction. During the year 1895 we began a four year's study of the Mniotiltidae. Three members were appointed to supervise as many departments of the work. Have we assisted these members as much as we were able? Do we fully realize the time and money each of these chairmen must spend, and their responsibility? Can we hold those who have assumed such positions responsible for the report they must make, if we do not assist them? Let us flood those chairmen with so many notes, in the next three years, that they will have to hire help to get from beneath the pile! If we *all* send just such notes as we make in a season what a volume it would make! and the Chapter would fill the position it is destined to fill.

Respectfully,

J. E. DICKINSON.

TREASURER'S REPORT

FOR THE YEAR ENDING JANUARY 1, 1896.

RECEIVED.

Balance on hand from 1895,	$ 6 26	
Annual assessments from various members,	34 00	
For publications, current and back numbers.	17 90	
Contributions for publishing Bulletins Nos. 4 and 5,,	40 50	
Total received,		$98 66

PAID.

Expressage and postage on publications,	$ 5 81	
Postage on Treasurer's notices to members,	1 35	
Election Bulletin and postage on same,	2 06	
Bulletin No. 4, Warbler Report,	22 00	
Bulletin No. 5, Crow Report,	50 00	
Total paid,		$81 22
Balance on hand,		$17 44

ELECTION REPORT.

MR. R. M. STRONG, President W. O. C.

Dear Sir:—I find the vote for officers of the Wilson Ornithological Chapter to be as follows:

For President—R. M. Strong, 12; W. A. Oldfield, 3.
For Vice-President—Ned Hollister, 8; Walton Mitchel, 6.
For Secretary—J. E. Dickinson, 8; David L. Savage, 5; Paul Bartsch, 2.
For Treasurer—Lynds Jones, 11; J. W. Jacobs, 3.
For Executive Council—John H. Sage, 11; O. W. Knight, 9; H. E. Miller, 7; A. H. W. Norton, 6; Chas. A. Ely, 6; H. C. Oberholser, 3.

F. L. Burns, *Judge of Election.*

I find this statement correct, and the following officers to be elected for 1896:

President—R. M. Strong, Oberlin, O.
Vice-President—Ned Hollister, Delavan, Wis.
Secretary—J. E. Dickinson, Rockford, Ill.
Treasurer—Lynds Jones, Oberlin, O.
Executive Council—John H. Sage, O. W. Knight, H. E. Miller.

R. M. Strong, *President.*

REPORT OF COMMITTEES.

GENERAL CHAIRMAN ON SPECIAL INVESTIGATION.

The work which was begun a year ago under the new system of dividing the investigations of the group under consideration among several committees, has been going steadily on. Statements of the heads of these committees appear later in this Bulletin.

It is evident that it will not be possible to publish the life histories of all of the Warblers in one Bulletin, even if it should seem best to combine all reports in one. Therefore, each committee will occupy an entire Bulletin with its report, taking ample space to go deeply into the subject considered, even to the minutest details. Thus the *Migration* Committee will be able not only to give the approximate time of arrival and departure of each species at any given locality, and the exact time of arrival and departure in specified years, but also to give the relative time of the arrival of the adults and young, and of the males and females; the state of plumage, numbers of individuals during the migrations, condition of weather, effect of weather, and many other little known phenomena. Contributions of such a nature should be given in your reports to the chairman of this committee whenever possible.

The committee on *nesting* will also have ample room in which to elaborate its report. In addition to determining more definitely the

situation and composition of the nest, deposition of eggs, incubation, and the various other topics commonly discussed, this committee will be able to indicate any geographical variations in nesting habits, nests, color of eggs, any effects of climate on nesting, effects of the sun on the color of the eggs and on incubation, distribution of pigment on the egg shell, and many other not less interesting topics as yet little known. The chief value of this report must be directly proportionate to the amount of material which the chairman will have at his disposal, resting as it will upon full reports from many localities. *You* may, therefore, greatly enhance its value by sending him *any* notes you may have, be they either old or new. Careful description of sets of eggs, period of incubation, and relations of the sexes in building the nest and in incubation, will be especially valuable.

None of the committees on the Warblers will be ready to make a final report this year, but a Bulletin containing a final report may be looked for next year. Meanwhile the work of the special committee on the Flicker is progressing, promising some very valuable additions to our knowledge of the subjects discussed.

LYNDS JONES, *Chairman.*

CHAIRMAN OF THE MIGRATION COMMITTEE.

MR. PRESIDENT :—

As soon as possible after assuming the chair of this department, I wrote personally to each member, as given in Bulletin No. 3, outlining the work for the year and requesting a reply, that I would know the stations which would be represented. Replies were received from nearly all, the majority promising their aid ; a few could not on account of business or study. The balance made no reply, although in many cases written to the second time. Schedules were then prepared for recording the migration of species and sent to each member, also to a number of other observers. The few which have thus far been returned, are from such widely separated stations that it is impossible to trace the movement of any species over any particular territory. They all agree, however, in this, that the representatives of the family were much less common than usual. This year an extra effort will be made to induce the members to contribute notes, and also to obtain the aid of many observers who are not yet members. I shall issue and send a circular letter and schedule before the vernal migration. I request those who have not sent in notes to do so as soon as possible. Respectfully,

J. E. DICKINSON, *Department of Migration,*
1122 S. Winnebago St., Rockford, Ill.

NESTING DIVISION.

Mr. H. C. Higgins, who has charge of this department of the work, issued a circular outlining the matter which reports sent to him ought to contain. He has received a large number of notes, in response to this circular, and is much encouraged with the outlook for his final report. Further notes from all will be thankfully received, and will add greater value to the report. Lest those who have received these circulars may have lost them, I take the liberty of reproducing here the essential parts of Mr. Higgins' circular. Do not let him lack for notes. Recollect that *any* notes you may have will be valuable to him.

What is your latitude? Altitude? The nature of your region (forests, prairies, etc.)? What Warblers are positively known to breed in your section? Are they common or rare?

What site is selected for the nest, and at what date does building begin? How long a time is used in constructing the nest? Of what is it composed? Do both male and female assist in building? Size of nest—inside and outside measurements? Variations of materials used, and relative positions of them if the same, at different times, or for second sets or both?

How much time intervenes, if any, between the completion of the nest and the deposition of the first egg? How much time is required to deposit the full set? How many eggs are usually deposited? Largest set, smallest set? The eggs—color, size and shape, by sets?

Number of days required for incubation, and habits and actions of birds during this period? Do both birds incubate; if so, ratio of time spent by each?

Is the first egg laid the first to hatch?

Is more than one brood raised a year?

Do both parents care for and feed the young?

Action of parents when the nest containing young is approached?

Number of days before the young leave the nest?

How long does the family remain together, and how long are the young cared for and watched over by the parents?

Is the species imposed on by the Cowbird? If so, are any means used to destroy its eggs?

How are the young of the Cowbird treated? Does the Cowbird ever kill the young Warblers?

Any other information regarding the nesting of any of the Warblers

in your locality will be received with thanks. No information is too little to be of value. I hope to receive from you soon any notes you may possess regarding the subject, and I trust you will make it a special study this season and thereby gain much valuable information—at the close of the season sending me the notes taken.

Thanking you in advance, I am, Yours very truly,

HENRY C. HIGGINS, Cincinnatus, N. Y.

FOOD AND SONG DIVISION.

The work on Food and Song has been left to the General Chairman, to whom the results of all investigations should be sent.

In determining the food of the several species of Warblers there is opportunity for great practical usefulness. The stomachs of all birds killed should be carefully examined, and a record of the contents made. The more careful the records the better. General statements are of little value.

Feeding habits are always interesting. Do the birds catch the insects on the wing, glean from leaves, pry into bark crevices, or glean from the ground? What is the proportion of eggs, larvæ, and adult insects taken as food? How many insects of a given size are eaten by one bird in a given time? What kind of insects are preferred as food? Such questions, with many more, are awaiting answers.

In addition to descriptions of songs, either graphically or in words or by musical notation, the committee desires information regarding the diurnal period of song. How many and what hours of the day does the species sing? Does it ever sing at night? How do weather and temperature effect the singing? Is the mating song different from the ordinary song? How much, if any, do the transient species sing during their migrations? How many and what weeks do the summer resident species sing? Why do they cease singing? These questions may serve as an illustration of what is wanted for this report. Any notes of any kind will be welcome.

THE FLICKER.

The special work on the Flicker conducted by Mr. Frank L. Burns, Berwyn, Pa., is being rapidly pushed forward. There is need for more notes relating to excavation for the nest, choice of trees, period of incubation, and relations of the sexes in excavation and incubation. Any notes about the young birds before they leave the nest and the length of

time they are fed after they leave the nest, would be very acceptable. It is impossible for any notes to come amiss. The commonest facts are not too common to be of use in such a report.

OFFICERS AND MEMBERS.

OFFICERS FOR 1896.

President—R. M. STRONG,.....Oberlin, Ohio.
Vice-President—NED HOLLISTER,,.....Delavan, Wis.
Secretary—J. E. DICKINSON,.....1122 S. Winnebago St., Rockford, Ill.
Treasurer—LYNDS JONES.....College Museum, Oberlin, Ohio.
Executive Council—JOHN H. SAGE, ORA W. KNIGHT, H. E. MILLER.

ACTIVE MEMBERS.

Adams, Stephen J.,.....Cornish, Maine.
Bartsch, Paul,.....Burlington, Iowa.
Bennett, Bert,.....Miller's Corners, N. Y.
Bent, A. C.,.....Taunton, Mass.
Bowers, L. T.,.....Columbia, Penn.
Buck, Henry R.,.....Wethersfield, Conn.
Burns, Frank L.,.....Berwyn, Penn.
Chase, Virginius H.,.....Wady Petra, Ill.
Cope, Francis R., Jr.,.....Germantown, Penn.
Dickinson, J. E.,.....1122 S. Winnebago St., Rockford, Ill.
Ely, Charles A.,.....Perrineville, N. J.
Galloway, J. C.,.....Montgomery, Ohio.
Garnier, R. L.,.....622 Court St., Los Angeles, Calif.
Gault, B. T.,.....Glen Ellyn, Ill.
Henning, C. F.,.....Boone, Iowa.
Higgins, H. C.,.....Cincinnatus, N. Y.
Hollister, Ned.,.....Delavan, Wis.
Jacobs, J. Warren,.....Waynesburgh, Penn.
Jones, Lynds,.....Oberlin, Ohio.
Johnson, Wait C.,.....Center Rutland, Vt.
Knight, Ora W.,.....Bangor, Maine.
Law, J. Eugene,.....Perry, Iowa.
McLouth, C. D.,.....Muskegon, Mich.
Miller. H. E.,.....280 Caroline St., Derby, Conn.
Mitchell, Walton,.....534 Summit Ave., St. Paul, Minn.
Mitchell, Howard P.,.....Mt. Sterling, Wis.

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Langille, Rev. J. H.,.....Kensington, Md.
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CENTRAL PARK,
NEW YORK
NATURAL HISTORY

AUDUBON'S CARACARA.

POLYBORUS CHERIWAY (JACQ).

BY A. H. W. NORTON, SAN ANTONIO, TEXAS.

A common resident of Bexar Co., Texas.

The habits of this bird resemble those of the vultures, especially its feeding; but in regard to its nesting and manner of flight, it is entirely different from its associates, the Turkey and Black Vulture.

It will eat anything that the Buzzard will, but by no means confines itself to dead flesh. Field-rats, snakes, lizards, and rabbits are preyed upon. The balls of refuse from their stomachs contain parts of beetles and bugs. I have often watched these birds stalking around some bunch of prickly-pear cactus, waiting and watching for some unlucky rat or snake.

The flight of the Mexican Eagle, as it is locally called, is exactly like that of the common Crow—always in a straight line with even, steady flapping of the wings. It is not much given to soaring, and does so only at great heights and in the company of vultures. I have never seen them make long plunges with closed wings, like the hawks, but they are adepts at making short downward swoops, and when doing this, often appear to turn completely over in the air.

This bird is seen to best advantage when standing among a group of vultures on the ground; the trim appearance and erect, almost soldierly bearing of the Caracara then bringing it into striking contrast with the crouching attitude of the vultures.

Being of a quiet and unobtrusive disposition, its temper is seldom ruffled. Still there is a limit to the patience even of the Caracara, for upon several occasions I have seen them give an interfering Red-tail a good drubbing.

The birds remain in pairs, and in the same locality year after year, and as far as I have observed, always return to the same nest to breed. I have always found the nest in live-oak or hack-berry trees, but never in mesquites, nor in the river bottoms. They seem to avoid river bottoms, and to prefer a brushy country with the large trees few and scattered. Of course the nesting sites will differ with the character of the country; but the fact remains that these birds are rare in the heavily timbered country twenty miles east of here, and are seldom noted in the hills about fifty miles north-west.

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Some of their nests are remarkable structures, often two feet high and a foot or more deep inside. Here, it is, as a rule, made of stiff weed stems, firmly matted together to prevent being blown entirely out of the tree. Deserted hawk-nests are often made over to suit the taste of the pre-empting Caracaras. As a result, nests are found having a firm foundation of sticks, on which are piled the inevitable weed stalks.

Generally the nests have no linings, the rough stalks being considered sufficient; but I know of one enterprising pair of these birds that gave their nest a complete lining of cedar-bark from a newly made fence near by, and also sprinkled the limb the nest was on, giving the whole a reddish appearance.

The first set of eggs is laid very early in March, and if left undisturbed, the birds will content themselves with rearing one brood; but if the eggs are taken or disturbed, they invariably lay another set. If the sets are taken in succesion, three sets or even four are laid in a season. Twice I have taken three sets from one pair in a season, and in 1893 I took four sets from one pair. In this instance the third set in the series was laid in a refitted nest near the nest in which the other three sets were laid. I have so often noticed the Caracaras laying the second or third set of a series in a newly built nest near the old one, that I have come to regard this action as the rule rather than the exception.

A few extracts from my note-book in regard to two of these series may be of interest. Let us designate two nests as A and B respectively. One is a large mass of decayed weeds, fully two feet across the top and about six inches deep in the middle, saddled in the crotch of a live-oak, about twenty-five feet up. The other is but a shallow platform of weeds, about thirty feet up in a live-oak. On March 2, 1893, I took a set of three from A and a set of two from B, both fresh. Again on March 25, I took another set of three from A and of two from B, both fresh. On April 15, I took a set of two from B, which was the last set from that pair that year. In this set, one of the eggs had a pure white ground color all dotted over with little red dots congregating at the larger end. On April 17, I took another set of three from nest A, or rather a new nest about 100 yards from the old nest. Again visiting nest A on May 18, I was surprised to find another set of two awaiting me. The eggs were quite fresh, and are the most peculiarly marked eggs of this species I have yet seen. The ground color was a light cream. One of the eggs was completely capped upon the larger end with dark red, while the other was capped upon both ends, leaving a ring of pale yellow around the middle of the egg. I am certain that these four sets were laid by the same pair of birds, as the nest and locality were watched.

From the above you may see that four sets—in all eleven eggs—were taken from nest A in seventy-seven days, and three sets—in all six eggs—were taken from nest B in forty-four days. The intervals between sets were very regular, being twenty-three, twenty-three, and thirty-one days for the one, and twenty-three and twenty-one days for the other.

I have taken incubated eggs as late as June 10, and have seen birds still in the nest in September; but these are extreme instances. The best time for collecting their eggs is during March and early April.

I find two eggs to a set more often than three, and have not yet taken a set of four.

The ground color is some shade of red or brown, sometimes pure white, but so obscured by markings as to be very indefinite. The eggs present every possible shade of red, brown, and black. Usually, the black is in the shape of small round dots, and sometimes in streaks. The pigment may be washed away from freshly laid eggs.

The average size of all the eggs of this species in my collection is 2.29 x 1.79 inches; the smallest, 2.09 x 1.79, 2.19 x 1.67; and the largest, 2.45 x 1.76, 2.25 x 1.87.

Beside the name of Mexican Eagle, I have heard the Caracara called Black-Capped Eagle. I must say that the latter name is quite appropriate.

GENERAL NOTES.

Canada Goose in Chester Co., Pa.—Throughout the foggy day of November 25, 1895, an unusual number of migrating Canada Geese (*Branta canadensis*) passed over this section of the country. One large flock numbering one hundred or more individuals became confused and bewildered in the fog, and alighting in the midst of a corn-field on an eminence in the Chester Valley, proceeded with much clamor to feed upon the scattered piles of husked grain. In a few minutes the field appeared as if a drove of hogs had run riot through it for hours. A shriek of the whistle of a passing locomotive startled the feasting birds, and a double discharge of a gun, in the hands of a farmer's boy, had no other appreciable effect than to send them over the North Valley Hills in much disorder, where they again essayed to alight in a field near Berwyn, but were frightened before all had settled. For some minutes they flew around in utter confusion, dividing into three irregular flocks, the largest of which contained sixty birds. Later in the day, presumably

the same flock came down to the West branch of the Brandywine, where several were shot and found to be in very poor flesh.

The older residents say that many years ago a flock of forty individuals settled in the valley, and having lost their leader, wandered about until all were shot, the last pair existing many months before finally falling victims to the gun.—F. L. Burns, *Berwyn, Penn.*

Rare Winter Birds at Meridian, Wis.—December 13, 1893, I shot a Red-headed Woodpecker (*Melanerpes erythrocephalus*). There is another individual at the present time which makes its home in an old oak tree near a farm dwelling. It does not appear to move around much, securing its living from a crib of corn a few yards distant.

On January 20, 1894, a fine specimen of American Robin was brought me which was caught by a trapper in a steel trap set for mink. The bait of fresh beef probably lured the bird to the spot. This is the first instance of either of these birds being seen in this part of Wisconsin during mid-winter.—J. N. Clark, *Meridian, Wis.*

Queer Actions of Golden-fronted Woodpeckers.—Mr. O. A. Pfeifer, of this city [San Antonio, Texas], tells me that a pair of Golden-fronted Woodpeckers wanted to make a nest in one of the gallery posts of his house. The birds worked through the pine board and were surprised, doubtless, at finding a ready-made cavity five feet deep. These birds do a house no good, so Mr. P. determined to stop them. He first stuffed some rags in the hole made by the birds, but they pulled them out as fast as he could put them in. Now comes the queer part of it. After pulling out the rags, the birds brought some week-old Mockingbirds from a nest near by, and dropped them into the cavity. Mr. P. heard the young birds crying in the cavity, and saw the Woodpeckers drop one young bird in. The young birds soon died, when the Woodpeckers drew them out and laid them on the gallery. Did the Woodpeckers put the young birds in the hole so that Mr. P. would not close up the entrance and so smother them?—A. H. W. Norton, *San Antonio, Texas.*

Notes from Michigan. — The Woodpecker as a Flycatcher. — I would like to know if catching insects on the wing is a common habit of Woodpeckers. On the evening of July 2, 1894, I was closing a day's observations at the summit of one of the sand dunes by Lake Michigan, when a Woodpecker of the species *Melanerpes erythrocephalus* darted

from a perch near by, paused a moment overhead to seize an insect, and returned to the tree. In a few moments it repeated the maneuvre, then flew into a hole in a pine stub near by, where it evidently had a nest of young. Soon it was out again making other captures with which it returned to the nest, stopping only long enough to deliver the morsels. I watched the entire performance repeated at least a half-dozen times. Whether the bird impaled the insects with its tongue I was unable to determine, but was led to think that it did so from the fact that it invariably caught two insects before returning to the nest, holding the first while watching for and while catching the second. I can best describe the motions of this bird by comparing with *Tyrannus tyrannus* in the same act. Anyone who has closely watched the latter bird knows the peculiar upward turn and the deliberate extension of the head and neck as it takes an insect. The insects caught by the Woodpecker were rather large and appeared to belong to the order *Trichoptera*.

[This habit is mentioned on page 22, Bulletin No. 7, U. S. Department of Agriculture, Preliminary Report on the *Food of Woodpeckers*, by F. E. L. Beal, Assistant Ornithologist. The credit of the observation is given to Dr. C. Hart Merriam. I also have seen the Red-heads make sallies from some high perch ofter insects, but never noticed it except in the fall.—Lynds Jones.]

Effect of a Storm on Hummingbirds.—One result of the extreme cold just after the middle of May, 1894, was a terrible slaughter of Hummingbirds. On the eighteenth of that month snow fell rapidly here for about an hour, the flakes being very large, wet and heavy. During this storm a Hummingbird flew into one of our school rooms and remained till the storm had passed. Within the following week the bodies of nine dead Hummingbirds were brought to me, all evidently killed by the storm or the cold weather following. I was told of several more being found dead or stupid with cold during that period. Previous to the storm the month had been unusually warm and pleasant. As eight of the nine birds brought me were males, I infer that migrations were then in progress and that few females had arrived. Basing an estimate on the territory from which these nine birds were gathered, and assuming that Muskegon represented an average of the state in advancement of the season and in storm conditions, at least 100,000 Hummingbirds were destroyed in Michigan by that storm. But it seems improbable that more than one in ten of those destroyed was discovered, and the actual number of these beautiful and tender creatures that perished must have been much greater than the above estimate.—C. D. McLouth, *Muskegon, Mich.*

An Albino Crow.—A rather unusual amount of comment and excitement has followed the advent of an apparently pure white specimen of *Corvus americanus*, which has been repeatedly observed in that part of Chester Valley adjacent to the Valley Forge Hills, during the past autumn and winter seasons. It associates with a goodly number of its sable-coated brethren, all of whom are permanent residents ranging this fertile valley, and are seldom molested by man. Strange as it may appear, this solitary example of albinoism seems to enjoy the full confidence of the flock, for it has been seen perched on the topmost branches of an isolated tree in a field, actually doing duty as the sentinel; its white plumage and guttural crow voice, as it warned its feeding comrades of a suspicious move and a possible danger in the road below, excited much wonder in the party that was fortunate enough to be passing at the moment.

This bird was first reported on July 4, 1895, an undoubted bird of the year from a near by nest. At that time it was not notably wary, but has since become so through the efforts of the "man with a gun;" and an ardent desire to reap a large pecuniary reward through a false notion of the value of this odd plumaged bird after it has been riddled with shot, has placed said man's persistence and woodcraft against the cunning and acuteness of the Crow. May the latter win! Until I hear of its demise, I shall not despair of experiencing the unique pleasure of flushing it from a nest of its own construction, in one of my spring collecting trips over the Forge Hills.

The above is only one of the many examples of the albinistic phase in this species, other records are of not unfrequent occurence in our rural press. I remember observing one in the midst of a flock that was feeding close to the railroad track at Berwyn, during the winter of '78–'79. In Bulletin No. 5, another instance is cited by Mr. John A. Bryant, Kansas City, Mo. In every case the albinos appear to enjoy the complete confidence of their kind. That this is not the case in similar occurences in which the English Sparrow figures, I am sure (see *Oologist*, January, 1896).

In view of the foregoing I cannot forbear reverting to one of the two hypotheses which follows: That *Corvus americanus* is color blind, or that the average intelligence of this species is vastly greater in comparison to that of *Passer domesticus*.—F. L. Burns, *Berwyn, Penn.*

An Albino Blue Jay.—On January 3, 1894, about five miles from here I saw a specimen of Blue Jay (*Cyanocitta cristata*) almost pure white. Contrasted with the snow on surrounding objects, a slight bluish cast

could be detected on back and head. As I had no gun the bird was not secured, but a good view was had at about fifteen yards distant.—J. N. Clark, *Meridian, Wis.*

Albinos at San Antonio, Texas.—During the summer of 1894, I found albinos among the three following species: Dwarf Cowbird, Black Vulture, and Krider's Hawk. All were unmistakable albinos.—A. H. W. Norton, *San Antonio, Texas.*

Unusual Winter Birds at Oberlin, Ohio.—Red-headed Woodpecker.—Never before during my six years residence in Oberlin, have I found the Red-heads all winter, even in the most favored places. During the past winter (1895-6) there have been from four to twenty individuals in every considerable woods within ten miles of Oberlin. The birds have been very local in their distribution even in the warmer weather, and one had need to visit that part of the woods in which they made their headquarters before being aware of their presence. They never wandered far from one locality, even for food. During the whole winter their notes were so greatly modified that I did not recognize them as belonging to this species, until I had caught the bird in the act of uttering the note. Instead of delighting in lowly perches on the fence or near the ground, as in summer, the birds confined themselves to the tops of the tallest trees in the denser parts of the woods. Taken all together, there was a marked difference in the habits and actions compared with the bird as we know it in summer. I can give no sufficient reason to account for their presence during this winter in particular. Their food has not been more plentiful than usual, nor has the winter been more mild than many other winters. They seem to have forgotten to migrate.

Flicker.—This is one of the few winters when the Flicker has been present even in limited numbers, during the entire winter. Unlike the Red-head, it has not been confined to the woods—has, indeed, scarcely been in the woods at all, but in the open fields and about town. It has been entirely silent all winter, and for the most part solitary. On February 27 the first call note was heard. During the coldest nights one found a comfortable roosting place behind the water-pipe on the west side of the Library building. Being an inhabitant of the College campus, he probably picked up his living from the streets. He was never heard from until the first of March, when his call note began.

Snowflake.—During the greater part of February Snowflake was a regular inhabitant of the fields, but so wary that any study of them

except with a strong field-glass was impossible. On February 10, a large flock was seen just outside of Oberlin. A single individual was seen feeding with a flock of Horned Larks on the same day. Nearly every morning during the month birds could be seen flying over the outskirts of the town, but with the first hint of returning spring they were off for the north again. None have been seen or heard since the 27th of February.

Horned Lark.—The true *alpestris* has been present in considerable numbers during the entire winter, mostly in moderately large flocks. When flushed they have been feeding on the timothy heads which stick up above the snow. The little burrows in the snow where they have passed the night, have been common on the snow covered landscape. Scarcely a morning has passed when they have not been heard flying over town from one feeding place to another. But their real song began on February 27, the day spring opened.—Lynds Jones, *Oberlin, Ohio.*

The Barn Swallow.—During the spring of 1893, while watching a pair of Barn Swallows, one of them alighted on a perch. It then stretched its neck and seemed to be choking on something for an instant, after which it gave its head a jerk and threw out a pellet. This was repeated three or four times before the bird was frightened away. When it was gone I examined two of the pellets, and found them to be composed almost entirely of the hard wing coverings of very small beetles. I wondered at the time if the bird might have been sick, or whether, like the owl, it was simply ejecting the indigestible parts of its food. The latter seems more probable to me, especially as I found it stated on the authority of De Kay, in "Birds Through an Opera Glass," that the Kingbird is known to eject the hard portions of its food in this way. If any one else has noticed any thing in this line I should like to hear of it. —Virginius H. Chase, *Wady Petra, Ill.*

Wilson's Petrel.—Mr. Lionel F. Bowers, of Columbia, Penn., announces the capture of a female Wilson's Petrel (*Oceanites oceanicus*) on August 29, 1893. He states that the specimen has been identified, but the record has never been published. This bird was found on the streets of Columbia, by a Mr. Kauffman, who presented it to Mr. Bowers. There had been a heavy snow, with the wind from the south-east for several days. The bird was almost dead when found.—Lynds Jones.

Absent Winter Birds at Oberlin, Ohio.—While the region about Oberlin has been favored by the presence of several species (see above) not commonly found during the entire winter, it has also been marked on account of the absence of a number of species which are ordinarily winter birds. These may be enumerated as follows :

Red-tailed Hawk.—Absent during December, January, and nearly all of February. It is usually not uncommon in the timbered tracts during every month in the year.

Red-shouldered Hawk.—Absent during December, January, February, and the first half of March. Though usually less common in winter than the Red-tail, it is one of our familiar winter birds.

Sparrow Hawk.—Seen only once during the entire winter. Usually seen in the vicinity of its last summer nesting place during the entire winter.

Short-eared Owl.—Absent during the entire time from November to March 15. In suitable localities it is a familiar object of the fields, especially during the winter months.

Mourning Dove.—Absent from November to March 27. While this species may not be present in January, it is yet very unusual that it is absent during all of December and February, and its absence during the greater part of March is almost unheard of.

Sharp-shinned Hawk.—Absent all winter. This is one of our rare species, yet it is almost always seen at some time during the winter.

Cooper's Hawk.—Absent during the entire winter. It may be questioned whether this species is not usually rare or even entirely absent during the larger part of the winter. But Mr. L. M. McCormick, whose observations in the vicinity of Oberlin have covered a number of winters, records it as a "tolerably common resident."

Crow.—Absent during December and January, and the first half of February. A few individuals usually remain all winter.

Meadowlark.—Absent during the entire winter. It is unusual when a few flocks of four to eight individuals of this species do not remain in the fields during even the coldest part of the winter.

Lapland Longspur.—Not recorded during the fall, and not found up to the present time (March 27). Usually small companies of this species may be confidently looked for from November 1 to April 20.

Junco.—Absent during the entire winter. This species is rare during the winter, at its best ; yet the mildness of the past winter would seem to cause a few to remain.

Song Sparrow.—Rare all winter. This species is usually common during every month of the year.

NORTHERN SHRIKE.—Not recorded in fall, and not seen until late in March. During the winter of 1894-5, several individuals remained in and around Oberlin.

The mild character of the past winter would seem to invite the birds which usually do not migrate southward, to remain. Food has been as plentiful as usual, yet a large number of our winter birds have not been present.—LYNDS JONES, *Oberlin, Ohio.*

CORRECTIONS.—BULLETIN No. 6 contained the statement that "Dickcissel is a regular summer resident in New England as far north as Massachusetts, being rare further north, but locally distributed." This is a mistake of the compiler of the notes and not of Mr. Buck. The bird was formerly found in that region, but is not now considered a bird of New England at all.

Mr. Buck informs me that he has found Grasshopper Sparrow almost in the suburbs of New Haven, and also on the north Massachusetts state line; and that therefore the word "very" as applied to the rarity of the species at New Haven, should be stricken out, and the bird's range extended into southern New Hampshire and Vermont. It is everywhere locally distributed because suitable places for nesting are not numerous.

The name of Mr. Chester Barlow, Box 135, Santa Clara, California, was inadvertently omitted from the list af Active members in BULLETIN 6. Mr. Barlow was elected an Active member in November, 1895. Also the name of Mrs. Agnes Chase, Chicago, Ill., who was elected last April.

Mr. Geo. D. Peck has changed his address to Salem, Oregon.

In BULLETIN No. 6, Mrs. T. B. Tullock should read Mr. T. B. Tullock, Rockford, Ill.

PUBLICATIONS RECEIVED.

Eggs of Native Pennsylvania Birds. A World's Fair Collection. By J. Warren Jacobs.

This is the second of the pamphlets relating to Pennsylvania birds, published by our fellow member, Mr. Jacobs. It is a neat ten page pamphlet with colored covers, containing an excellent half-tone photo of the author, as frontispiece, besides three half-tone plates of representative sets of eggs mounted for exhibition, and one plate of the nests and eggs of Ruby-throated Hummingbirds similaly mounted.

In his introduction, the author states the object of the pamphlet to be

"a memento of the Great [World's Fair] Exposition, and at the same time to give my friends a correct idea of the extent of the collection and how it was arranged." After briefly outlining, in the text following, the favorable position of the state of Pennsylvania, and the life zones found within its limits, the author sums up the collection in the following paragraph:

"About one hundred and sixty species and sub-species of birds have been known to breed within the boundaries of Pennsylvania, and of this number the collection under consideration embraces one hundred and forty varieties. These were carefully selected from a large collection of a series of sets of the various species, and with the exception of the Birds of Prey, sets containing as nearly as possible the common type specimens were used. In the selection of the eggs of the Birds of Prey, the largest and handsomest sets were taken. Only one set of each species was shown, as the space allotted to the exhibit would not permit of a larger collection showing the variations to which the eggs of many species are subject."

A brief list of the sets exhibited, with the dates of their collection, closes the pamphlet. It is unfortunate that a number of typographical errors should drop in to mar the effect of this portion of the work.

A similar pamphlet from every state in the Union would go far toward establishing the breeding range of all of the birds of our country.—L. J.

The *Linnaean Fern Bulletin*. April number, 1896. Vol. IV., No. 2. This sixteen page quarterly is "Devoted to the Scientific Study of Ferns." Published by Willard N. Clute, Binghampton, N. Y. As its name implies, it is full of matter of interest to the student of ferns. It is the official organ of the Linnaean Fern Chapter of the Agassiz Association.—L. J.

THE WORK FOR 1896.

The attention of all members is again called to the fact that our work is divided into several distinct departments, each under the special direction of a competent Chairman. Mr. J. E. Dickinson, 1122 S. Winnebago St., Rockford, Ill., has charge of the work on MIGRATION; Mr. H. C. Higgins, Cincinnatus, N. Y., NESTING; Lynds Jones, Oberlin, Ohio, FOOD and SONG. These three committees are working on the *Warblers* exclusively, and desire notes bearing upon their respective lines of investigation from all members. Each Chairman will gladly give any desired information in regard to the work in hand in his department.

In addition to these committees, there are two others doing work on special topics. These are : Mr. Frank L. Burns, Berwyn, Penn., on the FLICKER, and Mr. Howard P. Mitchell, Mt. Sterling, Wis., on NESTLING DOWN. The work of these committees is similar to that done by Mr. Burns in compiling the Crow Report. These Committees should have the hearty and active support of every member in our Chapter.

One of the privileges of every Active member is to have control of some special work, such as these committees are now doing, with perfect liberty to select any topic he may choose for his work. He may be sure of the hearty co-operation of the Chairman of the work on special investigations, and will find not only profit but great enjoyment in pursuing such work. The office of the Chapter BULLETIN is to print the final reports of all committees, so that publication of the results of your investigations, without cost to yourself, is ensured.

It will be remembered that the committees now at work were appointed a year ago, with the expectation that their work would not be completed for three or four years. It is probable that some of them will be ready to present their reports earlier than anticipated. In view of this fact, other lines of investigation should be taken up at once, lest there should be a period of inactivity after the committees now at work have presented their final reports for publication. Any member who desires to undertake the pleasant task of conducting any sort of investigations should communicate with the Chairman of the work, Lynds Jones, Oberlin, Ohio. It is earnestly hoped that a number of members will avail themselves of this opportunity to begin some original and profitable investigation. Bear in mind that the selection of your subject for investigaion is entirely within your own hands.

NEW YORK
NATURAL HISTORY

GENERAL NOTES.

SOME NOTES ON THE REDPOLLS OF DUNN COUNTY, WIS.—REDPOLL, *Acanthis linaria*.—A regular winter visitant, but much more abundant some winters than others. This was fully verified the past winter of 1895–6, when they first appeared about November 13, and increased in numbers until mid-winter, when thousands might be seen in a flock feeding on the various rank weeds of neglected fields, preference being given to the pigweed. The Redpolls roost in oak trees among the dried leaves that still remain on the lower branches, and are off to the fields at the first indications of day. The last were seen April 16, in small numbers. They were much more musical and restless during March and April. The red on rump and breast of the males was somewhat brighter during these months, and nearly all males showed slight traces of it on cheeks and breast. The greatest length of this species of more than one hundred specimens measured, was 5.65, shortest, 5.20 inches.

GREATER REDPOLL, *Acanthis linaria rostrata*.—This species was first seen January 9, 1896, and eight specimens taken from a small flock accompanied by about an equal number of *linaria*. They were feeding on the seeds of water pepper that grew in abundance on a tract of low timber-land. Thirty specimens of this variety were examined during the winter, all but two of which were taken in this same woods, and nearly always in small flocks, with more or less of the first species. They were generally darker in plumage, bill shorter and thicker, and of a larger size. They may be readily distinguished from *linaria* at a short distance when feeding. The voice resembles that of *linaria*, but is coarser and louder. Greatest length of males measured was 6.20 inches. Shortest length of males measured was 5.85 inches. Greatest length of females measured was 5.90 inches. Shortest length of females measured was 5.80 inches. Last seen March 26.

HOLBOELL'S REDPOLL, *Acanthis linaria holboellii*.—Of this variety three specimens were taken. One January 22, 1896, one March 25, 1896, and one April 3, 1896. All were identified by Dr. A. K. Fisher and Prof. Ridgway, through the kindness of Mr. Lynds Jones, to whom I am also indebted for the identification of *rostrata* and *exilipes*. The first was shot from the top of a maple tree, also a specimen of *linaria* was killed at the same shot, no others being near. The last two specimens were taken from quite large flocks of *linaria*, while on the ground, their darker

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plumage having attracted my attention. The three specimens measured in length 5.75, 5.60 and 5.60 respectively.

Hoary Redpoll, *Acanthis hornemannii exilipes*.—I first met with this species December 13, 1896, when a single individual was taken in a small flock of *linaria*. The species was found after this during the whole winter in small numbers, and nearly always in small flocks of *linaria*, frequently of but two or three individuals, they seeming to avoid the large flocks. The birds were mostly found feeding on pigweed, which seems to be their favorite food, as well as of *linaria*. They are mostly lighter in color and slightly larger than *linaria*, and are easily distinguished from the other species at some distance. Of thirty-one specimens examined, the largest measured in length 6.70 inches, and the smallest 5.40 inches. The specimens I have examined appear to have been mostly young birds, only three showing any red on the breast, and those only slightly. I could detect no difference in the voice of this species and *linaria*. The last was seen March 26.—J. N. Clark, *Meridian, Wis.*

Notes from Southern Wisconsin.—Holboell's Grebe, *Colymbus holboellii*.—A single male taken at Delavan Lake, November 15, 1895. Only specimen noted during several years' close observations among the water birds.

Double-crested Cormorant, *Phalacrocorax dilophus*.—I recently had the pleasure of examining a fine male, shot at Delavan Lake, April 6, 1896. It was a single bird and is the only specimen ever taken in this vicinity, for many years, at least; although I have long felt sure of its occurrence, having several times seen single birds which I took to be Cormorants.

American White Pelican, *Pelecanus erythrorhynchos*. — Three White Pelicans were seen on the "Sand Bar," at Delavan Lake, June 6, 1895. They allowed a fishing boat to approach within about fifteen rods of the bar before they walked into the water and swam away in the opposite direction. This recalls in the minds of old sportsmen the occurence of several on a neighboring lake several years ago, also during the summer.

King Rail, *Rallus elegans*.—I think this is a much more common species in Wisconsin than is generally supposed, although I have examined only three specimens from this locality. The first a fine male which I shot myself on September 2, 1892. Since then I have seen two immature specimens, one of which I was fortunate enough to secure. Another fine adult was seen this spring on May 3.

Wilson's Phalarope, *Phalaropus tricolor*.—However common this bird may be in other parts of the state, it is certainly a rather rare species here. Four specimens only, all taken on April 26, 1895, while feeding on the mud flats of the mill-pond.

Bald Eagle, *Haliaeetus leucocephalus*.—A beautiful male taken by myself at Delavan Lake, October 25, 1895. I was well out of sight in my duck blind, far out on a point, when I first saw this grand bird sailing up the lake, high above the water. I remained perfectly quiet and it flew almost directly over the blind and was almost motionless in the air, with eyes looking down, watching the decoys, when shot. Falling some twelve or fifteen rods out in the water, it only reached shore after a vigorous flapping of the wings, which it at once commenced.

Yellow-bellied Sapsucker, *Sphyrapicus varius*.—I had always looked upon this species as a rather uncommon bird, and was therefore much surprised to find on April 11, 1896, that they had literally "taken" the town. There were "Sapsuckers" everywhere, hundreds and hundreds of them, and the strange part of it was I had not seen one before this season. On taking a walk into the country at evening I found them here also in almost as great numbers as in town. Some shade trees, which would have from fifteen to twenty birds in them, were fairly dripping with sap and covered with the sticking insects, mostly small flies and a species of winged ant. Although their notes are not loud, yet owing to their abundance they were, at times, very noisy. The next day (April 12), I did not see a bird in town during the forenoon, but found them fairly common in the country in the afternoon. They seemed to have given place to the Flickers, which were exceptionally abundant this day, both in town and through the surrounding country. Saw a few of the Yellow-bellied, however, on the 19th, and the last pair of the "wave" on the 10th.

Evening Grosbeak, *Cocothraustes vespertinus*.—Very common last winter—seen from January 21 to March 30—the first occurrence here to my knowledge.

One of the most noticeable things about last season's bird life (1895), was the especial abundance of the Baltimore Oriole and Kingbird. Both species have already appeared in large numbers this season. The Rose-breasted Grosbeak is also on the increase, but my old favorite, the Brown Thrasher, does not seem to hold its own.—N. Hollister, *Delavan, Wis.*

Notes from Oberlin, Ohio. — *Ducks found on the Water-works Pond*.—A new water-works pond of several acres extent was completed

during the early spring (1896), lying well within the limits of the village. It lies within a stone's throw of the pumping station and one of the principal streets, and can be seen from about twenty dwelling houses. In spite of its exposed position and the lateness of its completion, at least five species of ducks visited it. Two pairs each of Redhead and Pintail were seen on April 4. Five male Buffleheads spent the greater part of the day of April 12 on the pond, and the same day and in company with them, a solitary Pied-billed Grebe and one male Lesser Scaup. Lesser Scaups were seen on the 14th, 22d, and 24th. The last date four males and five females. On April 12, two American Mergansers visited the pond.

A Forced Partnership.—A pair of Robins had made their nest on the horizontal branch of an evergreen tree which stood near a dwelling house, and the four young had hatched when a pair of English Sparrows selected the same part of the same branch for their nest. When the Robins refused to vacate their nest, the Sparrows proceeded to build theirs upon the outside of the Robin's nest. To this the Robins made no objection, so both families lived and thrived together on the same branch, with nests touching. The young of both species developed normally, and in due time left their nest. The branch bearing both nests is now preserved in the college museum.

Enterprising House Wrens.—A pair of House Wrens which had been in the habit of nesting in buildings, discovered a hole in the window screen of our neighbor's house, entered the kitchen through this hole, and took possession of a tin steamer which had not been in use for some days. With their characteristic enterprise, the steamer was soon nearly full of sticks. When deprived of this nesting place, they moved to a knot hole in the outside of the house.—Lynds Jones, *Oberlin, Ohio.*

The Bronzed Grackle.—*A Change of Nesting Sites.*—On the second day of May an old apple orchard was explored for its nests. Besides the nests of English Sparrows, House Wrens, and Mourning Doves, seventeen Bronzed Grackles' nests were found, almost all in the same position and nearly every one containing four eggs. The birds were quiet about their work. It is a new move for these birds to occupy this orchard. Last year they were found in a grove of evergreens not far away, but none in this orchard. Now the evergreen grove is deserted in favor of the orchard. The conditions prevailing in previous years do not seem to have changed, and no cause can be assigned sufficient to account for this change of nesting sites.—H. C. Tracy, *Oberlin, Ohio.*

THE BANK SWALLOW.—As a bird of Lorain Co., Ohio, the Bank Swallow has been considered common in summer, breeding in small numbers in suitable places. The larger number have been found nesting in the clay banks fronting on Lake Erie, but even here occuring in colonies of scarcely a dozen pairs. But this season there is a colony of about five hundred pairs nesting in a clay bank, the top of which is scarcely above the storm-wave mark. This colony is but a short distance from the banks where a few pairs of Swallows have nested every year. The nest cavities lie along the face of the bank from one to ten feet below the top of the bank, and are so numerous in places that the partitions of earth between them have fallen out, leaving one large cavity. The perpendicular face of the bank is worn smooth by the feet and wings of the birds as they alight.—LYNDS JONES, *Oberlin, Ohio.*

NOTES FROM PENNSYLVANIA.—This winter a flock of Pine Grosbeaks have been in our woods. I saw them first December 7, but think they had been here a month before that, as I recognized their note as one heard before but not identified. They are still here (April 8), as yesterday two females were near my door on the ground eating dry dead leaves. I find they are walkers, though they hop sometimes as well. When first seen I could find none among them in full male plumage, but many with patches of pinkish-red in all sorts of variations; but about March 1st I saw three males in full dress. Several times I have heard their song, delivered from the top of a tall tree, where the singer remained a long time repeating his delightful notes, but always as if *whispered*, low, under the breath, we should say, if it were a person singing. The song has much in common with that of the Purple Finch. I have heard other birds whisper their songs (if that is the proper way to express my meaning)—the Robin and Wood Thrush. Once a Wood Thrush sang three days near our house, and his voice sounded hoarse, as if he had such a cold he could not bring out the notes as he wished to, and it seemed to trouble him very much. There had been severe, long continued storms, and I dare say he had a cold. Another time, early in the Spring, a Robin always missed one note in his song, and that appeared to come from a huskiness in his throat. It was always the same note that failed to materialize. In the same way a White-crowned Sparrow, one spring during his call upon us, always skipped one note in his song. The same note each time and an interval left for that note. I heard this three days in succesion. Once I saw two White-crowned Sparrows sing a duet. They were taking their breakfast from the lawn and not more than a yard

from the house, singing between mouthfuls, when the two birds hopped toward each other, lifted their heads and sang, together and alternately, in a very sweet and friendly manner, and then returned to their coffee and rolls.—Mrs. T. D. Dershimer, *Squaretop, Wyoming Co., Pa.*

Horned Grebe, *Colymbus auritus*, in Chester Co., Penn.—On the 21st of April, 1896, an employe of the Pennsylvania railroad handed me a female Horned Grebe, *Colymbus auritus*, which had been picked up close to the track at Paoli, Chester county, early in the morning of that date. It had undoubtedly met its death through violent contact with the overhead wires, although I could find no injury except a slight cut at the tip of one wing. It was in fine plumage and exceedingly fat. Its stomach contained a quantity of green moss and fragments of water beetles, probably secured from one of our fresh water streams. What caused this decidedly aquatic species to venture so far from any considerable body of water, I am unable to venture an opinion, as we have had no considerable storm for some time previous to the date of its capture.—F. L. Burns, *Berwyn, Penn.*

The Attachment of Loggerhead Shrikes to Previous Nesting Sites.—How many collectors are aware that Shrikes will return annually to the same locality to build their nests? Early in May, 1891, I found a Loggerhead Shrike's nest in a certain tree within a mile of my home, and took the set of six eggs. The birds rebuilt in a neighboring tree and in a couple of weeks I took the second set of five eggs. A third set was laid and the young were successfully reared by the Shrikes, who built the nest on the site of the first one. In 1892 I happened to be passing that way, and to my surprise I found a nest with five eggs, occupying the site of the previous year. I took these and the birds at once rebuilt in the same place, rearing the young this time. In 1893, 1894 and 1895 I again took sets from the same site, and in each case the birds rebuilt and reared their young in the same tree. I am now wondering whether this year will find them on deck again or not, but I am very confident that I will take a set of eggs there early in May. I have knowledge of two other pairs of these birds which have nested for three years very near the same localities, but only in one case have they occupied the same tree, this occuring on the first and third years that the birds were observed. There cannot be any reasonable doubt that it is the same birds which return yearly to their former nesting places. Other collectors in this locality have informed me that they have taken nests in the same vicinity

for at least two years, so this seems to establish beyond a doubt that these birds have a strong love of home.—O. W. KNIGHT, *Bangor, Me.*

NOTES FROM MICHIGAN.—Do some individuals of the Golden-crowned Kinglet usually linger in northern climates until overcome and destroyed by autumn cold? On two different occasions, at places widely separated, I have known specimens to be found on the steps by doors of school buildings, apparently benumbed with cold. On being brought inside they became active again. I have no notes at hand on these observations, but think both incidents occurred in October. My observations indicate that the bird that suffers most here from the distructive propensities of boys is the little Brown Creeper, *Certhia familiaris americana*. Its fearlessness and the habit of working low on bodies of trees makes it an easy victim of the sling-shot. The Yellow-bellied Woodpecker, *Sphyrapicus varius*, is also a frequent victim. During the past two winters I have seen or heard at frequent intervals individuals of species *Melanerpes erythrocephalus*. Their haunts seemed to be among oak trees, near large buildings in which they may have found shelter.—C. D. MCLOUTH, *Muskegon, Mich.*

CASSIN'S VIREO IN SANTA CLARA CO., CALIFORNIA.—Last season was the first occasion upon which I had the pleasure of meeting Cassin's Vireo in its native haunts. It would seem that this Western form of the Blue-headed Vireo is more common in summer than many imagine. On May 19, 1895, I was out for a ramble along a creek in the low foot hills, the creek-bed being well covered with sycamores. Several young Anna's Hummingbirds were observed being fed by the parents, though the young birds could fly quite well. While watching a Hummingbird near a sycamore in the creek-bed I turned my head, and there, not more than a foot away was a nest of a Vireo suspended at the end of a thin, drooping branch of a sycamore. The bird was on and was easily recognized as Cassin's Vireo by the markings. I took hold of the branch and drew it towards me, but not until I had raised my hand above the nest did the bird leave. She flew to a limb near by and at once commenced to sing, the note being new to me. The male appeared instantly. I was surprised to find *five* young in the nest, apparently not more than two days old. This number I regard as quite unusual, for three or four eggs seem to be the number laid by our Vireos. The nest was composed of a little fine light grass, shredded sycamore leaves and a few small pieces of an old newspaper, doubtless gathered from the drift along the creek banks.

On the outside were small pieces of cocoons and here and there small bits of white spiders' webs, such as are found beneath the bark of trees. Several bits of paper hung from the bottom of the nest. The nest was about five feet from the ground. I left it and on returning shortly after found the bird again on, and although I approached very closely she exhibited no fear, merely eyeing me curiously. Quite a distance further up this same creek another of these Vireos was noted in a sycamore. It was shot and proved to be a male and had some downy building material in its beak.—C. BARLOW, *Santa Clara, Cala.*

NOTES FROM MISSOURI. — When notes on the range of Dickcissel, Grasshopper Sparrow and Henslow's Sparrow were asked for, I said that I had never found the two last named around here, but this spring I have seen three of the Grasshopper Sparrows. I also saw a Baird's Sparrow. This kind is rather rare here, but each spring I have seen a few of them. They seem to pass through just ahead of the common Savanna Sparrows, which pass through here in large numbers. On April 25, I secured a specimen of the Water Thrush (*Seiurus noveboracensis*). Its being here must have been merely accidental, as this place is outside its range as given in the new Checklist, and it is the first one I have seen, although the Louisiana Water Thrush has been quite common.

One morning last November, I noticed a fight between a Screech Owl and five or six Blue Jays The Owl was not very anxious to escape, apparently, but fought the Jays bravely and at length succeeded in killing one ; but the fight was brought to a close by one of the Jays giving the Owl a peck in the head, which stunned it so that they were able to kill it. It was so little injured that I made a good skin out of it.

In BULLETIN 7 it is asked if catching insects in the air is a common habit of the Red-headed Woodpecker. I have often seen them do it, principally in the fall however, and I have never seen them catch more than one at a time.—SIDNEY S. WILSON, *St. Joseph, Mo.*

THE WORK OF OUR COMMITTEES.

The migration period has now passed, and the nesting season is well under way. In a few weeks the Warblers will cease singing and almost entirely disappear. Let us not forget that we are studying the habits of these birds, nor that the notes we have are to be sent to persons who are work-

ing on special phases of the habits. Migration notes should be sent to Mr. J. E. Dickinson, 1122 S. Winnebago St., Rockford, Ill., as soon as they can be prepared for him. Do not make the mistake of thinking that your notes are too few or too fragmentary to be of any use. The most fragmentary ones may furnish the missing link in the scheme of migration.

There is yet ample time in which to study the nesting of many of the Warblers. The time occupied in building the nest, the order of deposition of the eggs, the period of incubation, the part played by the different sexes in incubation, the length of time after hatching before the mother ceases to brood over the young in the nest, the time when the young leave the nest, and many other not less interesting facts about the nesting of the Warblers need more light thrown upon them. Mr. H. C. Higgins, Cincinnatus, N. Y., will be greatly pleased to receive your notes relating to nesting.

The subjects of food and song may not seem related, and yet they may be profitably studied at the same time. The manner and duration of song can be studied and described by anyone. An intelligent description of a Warbler song is not so simple. Not only should the diurnal period of song be studied, but during the season as well. The beginning, duration and end of the song during the day as well as during the season, it is important to record. Food habits and manner of feeding are not difficult to study : and a record of the contents of stomachs can be made by those who may be working with fresh specimens. Indeed it should be the sacred duty of everyone to carefully record the contents of the stomach of every bird which he may secure. By never neglecting this duty he will never uselessly sacrifice the life of any bird, and at the same time be of service to science. Notes relating to song and food should be sent to Mr. Lynds Jones, Oberlin, Ohio.

While studying the Warblers, we must not forget that there is much yet to be learned about the Flicker. It is not so much the curious and exceptional things that we want to know about our commoner birds, as it is the things of every day occurrence which we may suppose everybody already knows all about. Whatever you may know about the habits of the Flicker, even to the commonest details, will be gladly received by Mr. Frank L. Burns, Berwyn, Penn.

But there is a field of entirely new and original investigation, in which anything you may learn will be new both to yourself and to others. I refer to Nestling Down, a subject which has been taken up by Mr. Howard P. Mitchell, Mt. Sterling, Wis., to whom any and all notes should be sent. It is a subject well worth your time and attention.

Mr. Stephen J. Adams, Cornish, Me., has consented to take charge of the study of the Swallows, A. O. U. Nos. 611–617 inclusive. He is ready to receive general notes relating to any and all species. Let every member contribute something to this report, which will be ready about July, 1897.

Other special subjects will be announced as they can be arranged for. It is hoped that a number of members who have not yet decided to attempt some special work will consider the matter favorably, and consult with the General Chairman about it.

NEW MEMBERS.

Mr. Sidney S. Wilson, 420 S 10th St., St. Joeseph, Mo., and Mr. G. M. Burdick, Milton Junction, Wis., apply for active membership. Only adverse votes need to be sent to the Secretary.

PUBLICATIONS RECEIVED.

The Oologist. Vol. XIII., No. 5. May, 1896. The present number consists of fourteen pages of reading matter, exclusive of the ten pages of advertisements, etc. The excellent character of this paper is too well known to require mention here.

The Museum. Vol. II., Nos. 6 and 7. April and May, 1896. The present numbers consist of about twenty-eight pages each, sixteeen of which are devoted to interesting articles on general natural science. Special mention need not be made here of a paper so widely known.

The Iowa Ornithologist. Vol. II., Nos. 2 and 3. January and April, 1896. This "Quarterly Magazine, devoted to Ornithology and Oology, published for The Iowa Ornithological Association," presents a pleasing appearance externally, and contains much matter of interest and value to ornithologists over the entire country as well as in its own state. It is published by David L. Savage, at Salem, Iowa.

The Observer. Vol. VII., No. 4. April, 1896. The official organ of the Agassiz Association. "For People who See and Think." Pleasing in appearance, containing matter in all branches of natural science

written in popular scientific style, interesting and valuable in the home as well as in the study—this is *The Observer*. It is published at Portland, Conn., by E. F. Bigelow.

The Happy Thought. Vol. III., No. 6. May 23, 1896. "For the Family Circle, the Housewife and the Clubwoman." Among other matter of special and general interest, one page is devoted to "Walks and Talks in Scientific Fields."

The Editor has been asked to more fully state his plans concerning the Chapter BULLETIN. They may be stated briefly as follows: Beginning with January, 1896, the BULLETIN will be issued the last of every other month regularly.

It will contain twelve pages of reading matter during the rest of the present year—1896.

It will be mailed free to all paid up members and to all Honorary members, and the subscription to persons not members will be fifty cents a year.

Advertisements will be received *of members* at the rates offered in the circular dated February 27, 1896. Rates to persons not members will be given on application.

The matter which will appear in the BULLETINS is well illustrated by the present number. Short, concise articles of special interest will be welcomed occasionally The effort being to give the greatest amount of information in the least possible space, makes long articles of only general interest out of place.

Final Reports of all committees will be printed in full in this BULLETIN as soon as they are ready. Such a Final Report would necessarily take the place of at least one regular BULLETIN. It could never take the place of more than two BULLETINS.

As soon as circumstances will warrant, the BULLETIN will be enlarged in number of pages, containing sixteen or twenty in each issue. Its enlargement will depend upon two things: 1st, a decided increase in our membership. 2d, a respectable subscription list. Both are in the hands of members of our Chapter. The Editor will do what he can to increase both, but the members can do far more than he. It must be remembered that our limit of fifty to the active membership roll is nearly reached,

so that our efforts should be largely directed toward securing associate members. We should have an associate membership roll of at least fifty before the close of the year.

Back numbers of Chapter publications, including the *Semi-Annuals* and *Quarterlies*, may be had upon application to Lynds Jones, Oberlin, Ohio, provided 15 cents in stamps is enclosed to pay postage. Extra copies of this and the preceding BULLETINS may be obtained by those who can use them in securing members or subscriber.

CENTRAL PARK, NEW YORK. NATURAL HISTORY

Bird's Nests, No. 1.

Yellw-billed Cuckoo.

Although there seem to be a great many of us who are interested in bird's eggs, it is only during the past few years that special study has been made of the nests, and it has been surprising to me that so little in regard to the composition of the nests and the comparative amount of material used has come to my notice in the natural history papers.

The following are a few notes I made this spring on the nest of a Cuckoo: I found this nest on May 21. The old one stayed on the nest till I was within three feet of her, and then she dropped to the ground and fluttered away among the weeds. When I went back to look at the nest on the 29th it was vacant. The nest was placed as firmly as the material would permit upon a slightly drooping bough on the south side of a box elder (*Negundo*) tree, which was growing on the bank of a small stream. The nest was so placed that it was almost impossible to see it from the ground, and was twenty-four feet up. This is evidently much higher up than usual for these birds, as in Chapman's book on N. American Birds,* he says, "four to ten feet up" only. The nest was four inches in diameter inside and five inches outside. The depth inside was one inch, and the depth outside, at the rim, was two and one-half inches. The weight of the nest was only one and three-fourths ounces. The bottom layer of it was mostly of dead, litchen covered, wild crabtree twigs, together with a few box-elder, willow and plum twigs. Upon this was a layer of box-elder twigs, still covered with green leaves. These were evidently used more for the twigs than the leaves, for the leafy end was invariably turned outward. Upon this was a layer of the dry pedicels of last years growth from the box-elder and a few of this year's seeds. The rim of the nest contained one piece of the inner bark of box-elder and one of elm, a few choke-cherry twigs with green fruit and leaves still on them, also a few crab-apple leaves.

The exact list of material found in the nest is as follows: fifty-three crab-apple twigs, total length sixteen feet four inches; one of willow, eight inches; eight of plum, total length, three feet one inch; fourteen of box-elder, total length, six feet four inches. The longest piece was nine inches, and the total length was twenty-six feet five inches, made

*Handbook | of the | Birds | of | Eastern | North America.

up of eighty-one pieces. The dry box-elder pedicels measured ten feet and the live ones two feet and contained twenty-two pairs of seeds. So the total number of pieces in the nest was one hundred and twenty, and the total length of these pieces was thirty-eight feet. In addition to these there were eleven crab-apple leaves, ten of choke-cherry and fifty-three of box-elder, making a total of seventy-four and a grand total of one hundred and ninety-four pieces, which the bird had brought together for the nest; and it was not such a remarkable nest either. There was nothing in the construction of this nest that might not have been procured within fifty feet of the tree upon which it was built.

Although it is not always possible to tell just what each piece in a bird's nest is from, it usually is, particularly if one has studied the botany of the locality somewhat.—VIRGINIUS H CHASE, *Wady Petra, Ill.*

GENERAL NOTES.

NOTES FROM MINNESOTA.—EGGS OF LE CONTE'S SPARROW.—On June 18 I took a set of four eggs with nest of Le Conte's Sparrow in Otter Tail County, Minn. The nest was in a meadow near running water, in a clump of weeds, and was composed of weeds, lined with fine, dry, yellow grass. The female was sitting and the eggs were very slightly incubated. They were pinkish-brown, dotted and streaked with dark-brown and black, and measured as follows: .80 x .56, .80 x .54, .78 x .52 and .76 x .50.

AN ALBINO ENGLISH SPARROW.—While driving on a country road near St. Paul, on July 3, I saw an English Sparrow nearly all white, among a flock of twenty or thirty other Sparrows. The bird was white, or more of a cream color, speckled on the wings, breast and tail with brownish-black.

A LARGE SET OF CUCKOO.—Mr. Oliver V. Jones, of Minneapolis, took a set of eight Black-billed Cuckoo last May. The eggs were all of normal size and varied greatly in incubation as usual, and were undoubtedly laid by one bird, as a careful watch was kept to discover more than two birds. The eggs were piled up in the form of a pyramid to keep from rolling off. —WALTON I. MITCHELL, *St Paul, Minn.*

NESTLING DOWN.—Mr. Howard P. Mitchell, who has in charge investigations relating to "Nestling Down," sends the following for publication:

On the 16th of May, 1894, I observed two young Horned Larks with nest-

ling down attached to the extremities of the feathers instead of to the skin, as I had supposed it to be. Finding nothing concerning this peculiarity in the bird books at my command, I corresponded with a few members of the Chapter, but got no light upon the subject until last March, when Mr. F. L. Burns, of Berwyn, Penn., wrote me the following: "In relation to Nestling Down, I can offer the following, which I quote from Brewster. 'Among the North American *Altrices* the young of most species are born with thin patches of delicate soft down, restricted mainly to the feathered tracts. Beneath this fluffy down the feathers are already forming; these soon appear bearing at their summits the little tufts of down that formed the down patches.' From the above good authority we learn that all young *reared in the nest* (with some exceptions) may be found in the condition you describe. I found it to occur in the following young, just after they had left the nest: Screech Owl, Cedar Waxwing, Worm-eating and Kentucky Warblers, Oven bird, Wood Thrush, and probably other species which I do not recall." In addition to the species mentioned by Mr. Burns, I have noticed the following: Horned Lark, Maryland Yellow-throat, Robin, Bluebird, Chipping Sparrow, Great Horned Owl, Mockingbird and Red-eyed Vireo. I have made notes of but one species, the Hairy Woodpecker, that does not have the nestling down.

From the above it appears that, although most altricial birds have this peculiar nestling down, there are some which have not. It is our object to ascertain what species are exceptions. While studying the other branches of our work, let us take note of the dress of the young while yet in the nest.—H. P. Mitchell, *Bear, Ark.*

The Recent Occurrence of the Turkey Vulture and Bald Eagle in Cook County, Illinois.—Two rather unexpected records of more than ordinary interest, and of rare occurrence for this section, fell to the lot of the writer the past spring, both being made, ratherly oddly enough, on board train, or while enroute from Chicago to my home, at Glen Ellyn. At 10:15 A. M. on April 1, while nearing Sacramento Avenue, two and one-half miles from the business center of Chicago, the train came up with three large black birds flying on our right. Their manner of flight, nearly stationary on this occasion, as they headed against a strong southerly wind then blowing, gave me a favorable opportunity of identifying them at once as straggling representatives of *Cathartes aura*, the naked red of their heads being plainly discoverable as the train drew closer. However, the noise and motion of the cars evidently changed their plans

somewhat, as they wheeled and passed rapidly from us to the north, the wind greatly aiding them in escaping further inspection. The sudden change of temperature experienced between this and the preceding day had been quite marked, which was doubtless responsible in a measure for the rather erratic movement of these birds. March 31 was a warm and spring-like day, the maximum temperature in the shade at Glen Ellyn, being 72°. On the morning of April 1 a decided change had taken place, the mercury standing, or having dropped to 30° at 7 A. M., with a strong wind from the south-east then blowing. The appearance of the Turkey Vulture at Chicago and vicinity is of such rare occurrence that records of this kind seem well worth mentioning. During a residence of many years in this section, these are the first positively noticed by the author.

Bald Eagle. — Another rare transient hereabouts is the Bald Eagle. With seemingly good fortune, I also had the opportunity of meeting with some of these birds later in the same month, or late on the afternoon of April 28. On board the cars again, as I have previously said, the train having but just passed through Melrose Park, or at a point a few miles beyond the western limits of the city, when looking out of the window on my left, a large brown bird was noticed, which evidently had but just arisen from the ground. A Crow was in close pursuit, and, with the fine, white head of the bird showing out with such a decided and pleasing contrast, it was easily distinguished as a fine adult specimen of *Haliœetus leucocephalus*. Aside from its rarity here, the late date of its appearance in this section also strikes one as being quite unusual. These two occurrences appear worthy of record.—Benj. T. Gault, *Glen Ellyn, Ills.*

Oberlin Notes.—The Migrations.—The migrations have developed some interesting features, largely due to the unusual weather which prevailed during the greater part of March. Snow covered the ground, and cold northerly winds prevailed during the month up to the 28th, when a decidedly warm wave carried the snow away. Slight movements of a few species had occurred late in February. About ten migrating Crows were seen on the 24th. Killdeers were heard on the evening of the 27th, and two Bluebirds came into town on the 29th. Several of the resident species gave evidence of approaching spring during the warm days of late February. Robins, Bronzed Grackles and Meadowlarks braved the cold weather and made their appearance on the 5th, 9th and 15th of March

respectively, but no other movements of any kind occurred during the month until the 27th, when a Mourning Dove formed the vanguard of the first real "wave" of the season of 1896. Killdeers, Bluebirds and Towhees followed the next day, besides migrating individuals of many of the resident species. On the 30th, Phoebe, Rusty Grackle, and Field, Fox, and Vesper Sparrows arrived, followed on April 1 by Cowbird, Marsh Blackbird, Belted Kingfisher, Loggerhead Shrike, Great Blue Heron, Wilson's Snipe, Redhead Duck, Pintail, and Junco. From this on to the middle of May the migrations were a series of waves extending over three or four days, with intervening periods of quiet, these usually lasting for about six days. The last decided movement occurred during the last four days of April, when twenty-two species arrived. Thus it will be seen that almost the whole of the spring migration occurred between March 27 and April 30. Under normal conditions the movement would begin late in February and end the second week in May.

Some Rare Birds.—Pine Grosbeaks were seen on April 1, in the river bottoms.

Canadian Warbler arrived on April 28, when four males in high color were seen on the College Campus.

Orange-crowned Warbler.—The second one for the county was taken on April 30. It was a male in full song.

Turkey Vulture.—It was with some surprise that I noticed in the A. O. U. Revised Check List that the northern range of the Turkey Vulture is the Ohio Valley, and with no less surprise that the Michigan state list also gives it as "very rare." During six years residence in Oberlin I have always found it as common as any of our large *Falconidæ*. One or more are seen nearly every day during the warmer part of the year, while a trip into the country, or a run to Lake Erie will reveal several. Small companies of them are occasionally seen near the lake in spring and autumn. No nests have been found, but the birds certainly breed in the county. At Grinnell, Iowa, a pair nested in a hollow stump year after year, until the stump was destroyed.

Yellow-breasted Chat.—Until the present year, but a single individual of this species has been recorded at Oberlin each season. During the first week in July the writer had occasion to make several trips to Lake Erie at a point sixteen miles from Oberlin. No less than six pairs of Chats were seen in the bramble copses near the road, all in full song. There is but one pair in the vicinity of Oberlin this season, as heretofore. It seems very probable that the Chats are more numerous in Lorain County than has been supposed.

HORNED LARK.—On April 8, 1895, a female Horned Lark (*Otocoris alpestris*) was taken in a field near Oberlin. The condition of its ovaries and plumage gave unmistakable evidence that the bird was sitting. A pair taken on March 16, 1896, proved to be *praticola*. Other specimens in the College Museum also indicate that in northern Ohio the breeding range of *alpestris* and of *praticola* overlap. No specimens of *praticola* have yet been taken in December and January, nor early February, which would indicate that its winter range is considerably south of this point. It is unfortunate that the two forms are so nearly alike that they cannot be distinguished with certainty in the field.—LYNDS JONES, *Oberlin, Ohio.*

THE WORK OF COMMITTEES.

As the nesting season closes and the autumn draws on, we need to remind ourselves that committees on special investigation are waiting for the notes collected during the spring and summer. It is not only the new facts which may have been learned that will be valuable material for these committees, but the notes on usual habits will be just as valuable, and as highly appreciated. The important thing is to send in your notes. Mr. J. E. Dickinson, 1122 S. Winnebago St., Rockford, Ill., will receive notes on Migration ; Mr. H. C. Higgins, Cincinnatus, N. Y., on Nesting ; Mr. Howard P. Mitchell, Mt. Sterling, Wis., on Nestling Down ; Mr. Frank L. Burns, Berwyn, Pa., on the Flicker ; Mr. Lynds Jones, Oberlin, Ohio, on Food and Song ; Mr. Stephen J. Adams, Cornish, Me., on Swallows. The greater the mass of notes to be worked over the more accurate will be the final report. Do not allow yourself to delay sending your notes to these committees until they are forgotten, but send at once and so help to bring about a speedy final report.

CHANGE OF ADDRESS.

If you change your address do not fail to notify the editor at once. Or if you have not been receiving the BULLETIN regulary do not fail to send your full address at once. Several members, whose addresses had been changed without notifying the Editor of the change, have complained that they did not receive the BULLETIN.

PUBLICATIONS RECEIVED.

The Museum, Vol. II, Nos. 8 and 9, June and July, 1896. Each number contains articles of interest to ornithologists.

The Observer, Vol. VII, Nos. 5, 6 and 7, May, June and July, 1896. Articles of special interest to all ornithologists appear in each number.

The Linnean Fern Bulletin, Vol. IV, No. 3. It is full of interest to students of ferns.

NOMINATIONS FOR OFFICERS.

Nominations for officers of the Chapter for the year 1897 must be made before the close of September. Since the next BULLETIN will not be out before the last of the month, this opportunity is taken to remind members that each active member in good standing is entitled to make one nomination for each office in the Chapter. This includes one nomination for each of the offices of President, Secretary and Treasurer, and three nominations for members of the Executive Council. In accordance with an amendment to the Constitution, the nominee for President having the second highest number of votes shall be declared Vice-President. Hence, no nomination for Vice-President need be made.

Members should regard the privilege of making nominations in the light of duty, and not fail to make nominations for every office in the Chapter. A list of present officers may be found in BULLETIN No. 6. All nominations should be sent to the President, Mr. R. M. Strong, Oberlin, Ohio.

The semi-annual election of new members occurs in October. Nominations for active membership should reach some officer of the Chapter before September 15, to insure publication in BULLETIN No. 10. Nominations for associate membership may be made at any time. They should be sent to the President.

The attention of members is called to the fact that notes sufficient for the space in the BULLETIN are not in early enough to give ample time for setting up the copy and reading the proof. Notes should reach the editor before the fifteenth of the month of publication. Elaborate articles are not called for, but only carefully written notes recording the rare find or interesting observation. The function of the editor is to collect and arrange for publication matter of interest to the readers of

the BULLETIN, not to create matter to fill space. Notes which may seem common and without interest locally, often prove of great interest when placed before the reading public. Do not hesitate to send in your notes because they may seem unworthy. Give the editor an opportunity to pass upon them.

OUR OFFICIAL ORGANS.

The Wilson Ornithological Chapter of the Agassiz Association was organized at Fall River, Mass., December 5, 1888. Its official organ was *The Curlew*, a twelve page monthly published by O. P. Hauger, Orleans, Indiana. The first Chapter matter appeared in Vol. I, No. 3, December, 1888. Publication was suspended with No. 7. Space was then secured in *The Ornithologists' and Oologists' Semi-Annual*, a forty-eight page magazine published by W. H. Foote, Pittsfield, Mass. With Vol. III, the magazine passed into the hands of C. C. Maxfield, Danbury, Conn., who published one number, when the Chapter assumed control and issued *The Wilson Quarterly*. *The Quarterly* ran through two numbers, and then gave place to *The Journal*, which, after the issue of two numbers, gave place to our present BULLETIN.

In view of the fact that the entire edition of *The Curlew*, and the first number of Vols. I and II, of *The O. & O. Semi-Annual* are now out of print, while other numbers are becoming scarce, it seems advisable to issue a table of contents of all Chapter literature down to the beginning of the present year. In the Table of Contents which follows, the contents of numbers in which no Chapter matter appears, as well as the entire contents of numbers largely made up of other than Chapter matter, is given, so that the table of contents of each number may be complete. Chapter matter is designated as Wilson Chapter Matter, and all other matter as Other Matter.

For the convenience of any who may desire copies of any of these publications, the following list of the numbers which are *not* obtainable is given: *The Curlew*, the entire edition. *The O. & O. Semi-Annual*, Vol. 1, No. 1; Vol. II, No. 1. BULLETIN, Nos, 1, 2 and 3.

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Bulletin No. 4.—January 15, 1895.

Warbler Report. Being a report upon the distribution and migration of forty-eight species of Warblers of the United States. The report covers twenty-two pages.

Bulletin No. 5.—March 15, 1895.

The American Crow, with special reference to its nest and eggs. In this Bulletin Mr. Frank L. Burns has given a careful account of the habits of the Crow, drawing freely from numerous notes contributed by members of the Chapter. The report covers forty-one pages. A Supplement of four pages accompanies this Bulletin. It contains a note from the President, Treasurer's Report, Work for the Year, Calls for Notes on the Flicker, and on Food Habits of Warblers, Corrections.

A Report on the Owls, (twenty species and sub-species), appeared in the *Popular Science News*, Vol. XXVII, No. 5, page 70, May, 1893.

A page of Chapter business and other matter appeared in *The Taxidermist*, Vol. I, Nos. 4 to 12 inclusive (except No. 9).

CENTRAL PARK
NEW YORK
NATURAL HISTORY

NOTES ON THE BIRDS OF OKANOGAN CO., WASHINGTON.

Any mention of the *avifauna* of Okanogan Co. would be incomplete without a general statement of the physical conditions. Okanogan Co. is pre-eminently a mountain county, so that in an area almost equal to the State of New Jersey the only level spots are the usually narrow terraces or benches, of the Columbia, Okanogan, and tributary rivers. The climate varies from semi-arid in the south-eastern portion to very moist in the glacier-scored peaks of the north Cascades in the western part. The vegetation in turn passes from the sage-brush and bunch-grass of the terraces and foothills, through the pines of the lower ranges to the dense fir forests of the higher altitudes, above which the bare *aiguilles* tower. Thus it may be readily seen that the region is one of transition, receiving as it does the hardiest birds of the south-eastern sage-plains, besides an overflow from the Puget Sound region in the spring, and affording a summer home for birds which frequent higher altitudes.

The most important physical modification of this mountain county is Lake Chelan, which extends for a distance of sixty-five miles from the low sage hills of the east into the very heart of the wildest mountains of the Cascade Range. This provides a winter retreat for the hardier water-fowl.

The central station for the observations taken, is the town of Chelan, situated on a low terrace at the foot of the lake. The birds noted below represent all the species found under the head indicated, during a residence of fourteen months in Okanogan county.

Sub-family Tetraoninae, Grouse.

Sooty Grouse. *Dendragapus obscurus fuliginosus*.—The spring-bird of the lower foot-hills. They appear to move down from their winter home in the fir trees of the higher slopes, during the last week of March. At this time, and, indeed, until after the breeding season, they are quite unwary. The males, especially, appear so engrossed in their sole occupation of hooting, that they may be easily approached, and studied at close range—say thirty feet, if one is lying on the ground. One such I spied

on the first day of April, 1896. He was on a ridge about a hundred yards away, strutting and parading like a turkey cock, in plain view. As I sneaked up within a few yards of him, he became more subdued, and stood, for the most part, quietly in the grass, with his neck inflated like a pouter pigeon's. One could see the volume of air, alternately increase and diminish as he gave his muffled "Hoot, hoot, hoot, tu-hoot, tu-hoot." This was not necessarily accompanied by any show of neck ornaments, but when he became vehement, as when he spread his fan-shaped black tail for a strut, the inflation of the throat increased to such an extent as to disclose a considerable bare spot on each side of his neck, surrounded by a large, white ring of feathers. This certainly made a stunning feature of the gallant's attire ; for nature has provided that the feathers immediately about the bare spot shall have extensive white bases below the sooty tips. Ordinarily the upper feathers completely conceal the bald spot, of which the fellow is so vain, so that during excitement, a brilliant, white circlet of feathers some five inches across, flashes forth from each side of the bird's neck, as the upper feathers are raised and reversed. When I tired of studying his vanity, I mocked his hoot repeatedly ; he lowered his head with some show of hostility, but did not attack.

While this was going on another cock was to be heard at some distance and his calls were apparently being answered by a low monosyllabic "*toot*" of the hen. This cry was repeated at somewhat greater intervals than those of the cock. Of course the hooting sound is made in the windpipe, but the inflated throat acts as a sounding-board. The large, triangular syrinx could be made to give forth a sound very much resembling the bird's efforts, by simply blowing at the proper intervals through the entering windpipe, and placing the thumb and fore-finger partly over the aperture.

A set of eight eggs of this species was discovered on May 5th, by Mrs. W. L. Dawson, and their situation is described as follows : The eggs were deposited on the ground beneath a service-berry bush, which sprang from a chance level spot on an otherwise sharp hillside. There had been no apparent attempt at nest-building, as the eggs lay upon nothing but the few fallen leaves of the bush, and these had not even been scratched together. The only cover afforded the bird was the general protection of the tall bush. The eggs were of characteristic type, except that they were unusually small. Three specimens measured 1.72 x 1.28, 1.78 x 1.30 and 1.78 x 1.33.

When the young are nearly full grown, the flock begins to retire slowly

up the mountain sides, until by the middle of fall they are to be found only on the higher ridges. Those, however, whose winter homes are in the highest western ranges, do not seem to have so much latitude of movement. On August 5th, I encountered a brood of full grown young on Wright's Peak, at an altitude of 7000 feet : and although the winter snows still clung in patches to the mountain-sides about them, I have no reason to suppose that they were raised more than half a mile away.

Franklin's Grouse, *Dendragapus franklinii*.—Not nearly so common a bird as the last. It does not apparently range so low as the Sooty Grouse in any given section, where both are found ; nor on the contrary, I suspect, is it to be found about the higher peaks.

On the 28th of April, 1896, I found a nest of this bird at an altitude of about a thousand feet above Lake Chelan. It was placed in the tall grass, which clothed the side of an inconspicious "draw" bottom, and although the plough had recently turned up the soil within five feet of her, the mother bird clung to her post. I took several "snap shots" of her at close range, and she allowed me to advance my hand to within a foot of her, when she stepped quietly off the eggs and stood looking back at me over her shoulder. The nest was a depression in the gravel-filled soil, lined with grass and dry corn leaves, besides a few stray feathers : depth 3 inches, width 7 inches. The seven eggs are unusually large : 1.98x1.83 and 1.94x1.35 are the measurements of two average eggs of the set.

Oregon Ruffed Grouse, *Bonasa umbellus sabini*.—The differentiation of the sub-species of the Ruffed Grouse is not at all clear in this region. In any case the range and habit of the local species is nearly like that of the eastern bird, inasmuch as it frequents copses, springs and river bottoms at low altitudes. One hardly knows when he hears a sharp, rapid, "*Dsek, dsek, dsek, desk*" close at hand in the brush, whether he has started up a "pheasant" or a red squirrel.

White-tailed Ptarmigan, *Lagopus leucurus*.—This species is reported as not uncommon in the higher altitudes. I met with them once on the barren summit of Wright's Peak, at an elevation of about 9,000 feet. So far from deserving the name of "fool hens," applied to them in the winter season, when they may be readily approached, these ptarmigan in August were excessively afraid and absolutely unapproachable ; although it is certain they had never seen a human being before. One, upon sighting me at fifty yards, squawked in extreme terror and whirred away at a wonderful pace.

Columbian Sharp-tailed Grouse, *Pediocaetes phasianellus columbianus* —The common bird in open situations which yet afford copses and

cover—an invariable accompaniment of stubble fields and a habitue of grain-stacks. Although bred to a terrestial life they are quite at home in the branches of a willow or alder sapling. Indeed, from the frequency with which I have met them in such situations in the evening and at early morning, I have even suspected that they sometimes roost so.

Suborder Cypseli. Swifts.

Black Swifts, *Cypseloides niger*.—These erratic and almost uncanny creatures appeared at Chelan several times during the summer of 1895. The birds would come in a straggling flock along about 7 o'clock in the morning, hawking at insects as they went, but all, in general, coming from up the lake and moving eastward. I saw them only once this year, on June 9th. On this occasion I saw a company of a score hunting leisurely, at high noon, over the Okanogan river. In the evening of the same day a hundred or so gathered, after the manner of Chimney Swifts, to gyrate in social fashion, at a point on the Columbia river twenty miles south from the first ones observed.

Vaux's Swift. *Chætura vauxii*.—The only point in the country where these birds were noted was at the head of Lake Chelan, where they regularly nested and roosted in the hollow trunks of dead balm trees.

White-throated Swift, *Aeronautes melanoleucus*.—A single specimen seen while exploring the cliffs of the Columbia river gorge seems referable to this species. Probably a wanderer from some detached colony recently emigrated to this northern limit of the semi-arid region.—William L. Dawson, *Oberlin, O.*

GENERAL NOTES.

A Foster-Brother's Kindness.—Sometime during the past summer a friend of mine at Chelan, Wash., secured a fledgling Bullock's Oriole, by rescuing it from the water where it had evidently just fallen from the nest. When taken home it proved a ready pet and was given the freedom of the place. Some two weeks later my friend obtained another nestling oriole from another brood and put it in a cage with the older bird. The newcomer had not yet learned to feed himself but only opened his mouth and called with childish insistence. Judge of the master's delight, and mine as a witness, when the older bird, himself but a fledgling, began to feed the orphan with all the tender solictude of a parent. It was irresistably cunning and heartsome too, for the bird to select with

thoughtful brotherly kindness, a morsel of food and hop over toward the clamoring stranger and drop it in his mouth—after this to stand back and say : "There baby, how did you like that ?" This trait was not shown by a chance exhibition but became a regular habit and was still followed when the older bird had attained to fly-catching. It upset all ones notions about instinct and made one think of a Golden Rule for birds.—W. L. Dawson, *Oberlin, O.*

Notes from Oberlin, Ohio.—The summer which has just gone has been a profitable one from an ornithological standpoint. Many things of special interest have been noticed, some of which may go into a special bulletin.

Flights of Birds.—Nighthawk.—From August 22 until September 16, Nighthawks passed over Oberlin in a southerly direction in companies of six to ten, every evening about an hour before sunset. They flew low over the fields and meadows, but rose to several hundred feet when passing over the village There was an interval of about four minutes between the appearance of each of the several companies. The largest number of birds counted on any one evening was 150. There were usually about 100. In no case was the flight direct, but the birds were feeding as they traveled.

Crow.—Throughout the summer crows were seen in the usual numbers singly, in pairs or small companies during the day. On September 7, at 5 o'clock in the evening, 398 were seen, flying in a north-westerly direction. They were in two companies, with an interval of eight minutes between the two. Each company was first noticed in a field of corn, feeding on the green kernels. The flight took the form of a line of march fully two miles long and an average of four abreast, with skirmishers far out on each side. These skirmishers were the only individuals to stop as long as the birds were in sight. The line of march presented a ragged appearance, and sometimes broken, when the birds in front of the break in the line would be gathered into a small company. I have no doubt that the birds were on their way to a roost for the night. On the succeeding night about the same number were seen going in the same direction, but all in one company. On several different occasions and at as many different points numbers of crows were seen flying in a westerly direction. By tracing these several lines of flight it is found that they converge at a point about eight miles west of Oberlin, on a wooded river bottom. It has been impossible to visit the spot to determine if the surmise that the birds roost there is correct.

Chimney Swift.—The Swifts have a rendezvous in a large chimney of

one of the college buildings, where they pass the night. From about two hours before sunset until twilight is fading, clouds of them may be seen hovering near this chimney or whirling about in the near vicinity. During the day they are dispersed about the country feeding. When the Nighthawks were passing over the village the Swifts harrassed them unmercifully.

Of the flights of Cowbird and Bronzed Grackle I shall have something to say later in a special bulletin.

Bluebird.—The increase in the numbers of the Bluebirds over last summer is especially marked. One may find a few every day in whatever direction he may look. Small flocks may be met with in the country.

Goldfinch.—Ordinarily the Goldfinch is choice in the selection of its nesting site, preferring the region of the lake, or some fair seized stream. The past season it has been found nesting in considerable numbers in all the brushy pastures near Oberlin, and but few pairs were seen on the lake marshes where it has usually been so numerous. A nest with fresh eggs was found August 22.

Pine Siskin.—This usually rare bird was found with Goldfinches, helping to form large flocks, on September 26. It seemed to be rather common, and made no attempt to separate from the Goldfinches, rather preferring their company. A few individuals were singing. All were in fall plumage.

Among the birds which have been ususally abundant during the summer and fall, Flicker and Red-headed Woodpecker, Vesper and Song Sparrows, and Goldfinch deserve special mention. Meadowlark is still abundant.

There has been a marked decrease in the numbers of Wood Thrushes, Rose-breasted Grosbeaks, Accentors and Louisiana Water Thrushes over previous years. It has been difficult to find any in the woods since early spring. No reason can be assigned for this scarcity.

Pugnacity of the Ruby-throated Hummingbird.—As I sat in a bramble thicket watching for birds on August 17, a Red-eyed Vireo dashed into the thicket, hotly pressed by a Hummingbird. The Vireo sought refuge in a dense tangle of thorns within a few feet of me, but was soon forced to leave it. The tactics of the Hummingbird gave the Vireo no rest, for while the Vireo was flying his tormentor bumped against him repeatedly, seriously disturbing his equilibrium ; and when perching he was made dizzy by the antics of the Hummer, which kept up a constant dancing motion within a few inches of the Vireo.

Both birds were evidently much heated and tired. The Vireo uttered a plaintive noise resembling that uttered when his nest is destroyed. I have no doubt that the Hummingbird could worst any bird that flies if he should wish to fight. He seems to have learned all there is to know about aerial locomotion, and his diminutive size enables him to dart about with incredible swiftness. He has no weapons of offense worth mentioning, it is true, but his whirring presence might become very annoying to another bird.—Lynds Jones, *Oberlin, Ohio.*

Death to the sparrows.—Last evening (Aug. 3rd) a terrific hail and wind storm struck the city [St. Paul] about 12 o'clock, and this morning the streets around the city parks are covered with dead sparrows. In one residence lawn on Summit Avenue I counted over 600 dead sparrows, mostly young of the year.—Walton I. Mitchel, *St. Paul, Minn.*

ABOUT THE WORK.

In spite of the financial depression and the closeness of the times, the past year has not lacked its share of ornithological progress and enthusiasm. There is a growing interest throughout the country, especially in educational circles, for the study of the interesting science of Ornithology. The tendency is in the right direction, also, as it looks toward the economic value of birds and an appreciation of the ornithological science. Students of birds who are not bird and skin collectors masquerading as ornithologists are becoming numerous. The field glass is coming more and more to replace the gun. The disciples of Burroughs are multiplying. Books touching the popular scientific side of ornithology now have a wide circulation.

A very important move, and one that, it is to be hoped, will be generally successful, is the recent petition of the U. S. Dept. of Agriculture to the schools of the country for the establishment of a "Bird Day" somewhat similar to Arbor Day. The proper and general observance of such a day ought to have considerable influence against wanton shooting of small birds and indiscriminate egg collecting by American small boys; and its educational value can hardly be over estimated. Members of the Wilson Chapter should urge upon the school authorities of the various towns in which they reside, the importance of observing "Bird Day."

Mr. Lynds Jones gives two courses in Ornithology, one elementary, and the other advanced, in Oberlin College. Both courses are offered

in the spring and are very popular. During the past two years, the study of Ornithology has become quite general among cultured people in Oberlin, as the result. The courses are quite extensive and comprehensive and are designed for upper class students.

The classification of North American birds is practically settled and *general* geographical distribution is fairly well defined. There seems to be little reason for much more extensive collecting and there is certainly little to justify most ornitholigists in making private collections of large series of single species, except for careful study and research. Desire for study of individual variations, etc., cannot be sufficient ground for the wholesale slaughter of birds even now becoming rare. The writer does not wish to condemn all collecting nor the accumulations of series in our museums and colleges, where students may study them. There are few men who can make use of a large private collection of birds or their eggs who will justify the collecting, however.

The time has come for a more careful and systematic study of the habits and economic relations of birds. The food of birds at various seasons, period of incubation, the appearance of the young, periods and manner of moulting, etc., are broad fields yet to be explored. Geographical distribution, including the conditions that govern it and the mapping of the lesser life areas is yet in its infancy. Mr. Jones spent a large portion of the summer studying the habits of the Bronzed Grackle and a grackle roost in Oberlin. A valuable paper may be expected from him giving the results of his observations and conclusions in a few months.

One of the widest fields in orinthology is to be found in the study of migration. Much has been done along this line but much more is to be done. Mr. J. E. Dickinson has charge of the committee work on migration of the warblers and wishes the notes of all the members of the chapter.

Mr. H. C. Higgins has a committee studying nesting habits of the warblers. No family of birds is more fascinating than this group and none needs study any more than these "feathered jewels" of our woods and streams.

Mr. Frank L. Burns, Berwyn, Pa., is preparing a careful report upon the Flicker. He writes that he already has something like eighty local names for this widely distributed bird. Mr. Burn's report on the "Crow" attracted great attention and deserved praise from prominent ornithologists. The demand for his report exceeded the supply of copies. It will undoubtedly be as great an honor to be a contributor to his Flicker bulletin.

An almost unoccupied field for original investigation is to be found in the study of "Nestling Down." Mr. Howard P. Mitchell, Mt. Sterling, Wis., has charge of this work.

Notes on the food and song of birds should be sent to Mr. Lynds Jones, Oberlin, Ohio. The study of the food of birds is of the greatest economic importance and it would be hard to find anything more fascinating than the study of bird song. A good ear and some knowledge of musical scale are necessary in studying bird songs.

Members are referred to Bulletin No. 8 and 9 for further information concerning committee work and to the chairmen themselves. The bulletins of the Wilson Chapter are in great demand and the work of the committees is highly praised. It is an honor to be a contributor to one of the reports, which may not be lightly esteemed.

I am sure that all have read with much interest the article entitled "Bird's Nests, No. 1." in Bulletin No. 9, by Mr. V. H. Chase, Wady Petra, Ill. It is a suggestion that much may be done toward a far better understanding of birds' nests and bird mind as exhibited in the preparation of the most important office of the bird's life—propagating its kind—by a careful study of the nest after the young have left it to take care of themselves. Mr. Chase proposes to take charge of a committee which shall have for its object such a study of nests, and the publication of the results of the work in a special bulletin. This study need not be confined to the summer months, but nests may be preserved and studied during the winter when outdoor work is at a minimum. Many old nests could be obtained now in a good state of preservation. Of course the positive identification of the nest is of the first importance. I trust that this committee will have the earnest and enthusiastic support of every member.—R. M. Strong, *President*.

ELECTION OF OFFICERS.

The annual election of officers for the Wilson Ornithological Chapter will begin November 25th and close December 5th. The following persons have been nominated to fill the several offices of the chapter.

For President—R. M. Strong, Ned Hollister.

For Secretary—J. E. Dickinson, A. T. Wayne.

For Treasurer—Lynds Jones, Ora W. Knight.

For Executive Council—John H. Sage, V. H. Chase, W. I. Mitchell, B. T. Gault, J. C. Galloway, H. C. Oberholser.

NOTE—In accordance with a recent amendment to the Constitution, the nominee for president who receives the second higher number of votes will be declared vice-president.

In accordance with the constitution of the W. O. C., Article III, Section II, Mr. Frank L. Burnes, Berwyn, Pa., has been appointed Judge of Elections. All ballots must be sent to him to be counted. Members in arrears for dues will be eligible to vote, provided their dues reach the treasurer, Lynds Jones, Oberlin, O., before Nov. 25.

It is earnestly hoped that every active member will not fail to cast his vote for some candidate for office for the coming year. The list of candidates is placed before you to give you an opportunity to vote for such as have received the highest number of nominating votes, if you chose to. But you are not confined to the nominees whose names appear in this Bulletin in your choice of officers. You have the privilege of voting for any active member of the chapter, if you prefer. Your vote need not wait until Nov. 5, but can be cast and forwarded to the Judge of Elections, Mr. Frank L. Burns, Berwyn, Penn., at once. You will stimulate interest in your fellow members, but particularly in the officers of the chapter and give them great encouragement in the future work of the chapter, by casting your vote for some member. Do not fail to do so.

EDITORIAL.

This number of the Bulletin has been delayed in order that all lists of nominations for officers for the ensuing year should be in. The November number will also be delayed a few days for the purpose of announcing the result of the election, which closes December 5. The editor feels that members prefer it so rather than to wait two months before learning of the result.

Members are requested to send their notes for publication to the editor as soon after receiving this number as possible, giving plenty of time for arranging them in the best order. As the close of the season of migration and active outdoor study approaches, each must have at command many notes which should be put where fellow workers can learn them. Facts discovered and hoarded are likely to be forgotten, in any case they are barren of results. It is only as we let others know about our work that we shall be recognized as active students of our beloved science.

NEW MEMBERS.

The following names are presented for active membership in the chapter: Mr. Oliver V. Jones, Minneapolis, Minn.; William L. Dawson, Oberlin, Ohio.

Adverse votes should be sent to the Secretary within thirty days.

The following associate members have been received since the issue of the last Bulletin: Mr. Russell Gray, Philadelphia, Penn.; Miss Caroline Mathews, Waterville, Maine.

PUBLICATIONS RECEIVED.

The Linnean Fern Bulletin. Vol. IV., No. 4, October, 1896. It is growing better with every number.

The Museum. Vol. II. Nos. 10 and 11, August and September, 1896. The many and exhaustive articles treating of general science are well worth the reading and study.

Interchange. Vol. I. Nos. 1 and 2. March and June, 1896. A new ten page quarterly, full of interesting general notes and news, issued by Mr. O. P. Hauger, Orleans, Ind.

The Osprey. Vol. I. No. 1. September, 1896. Published by the Osprey Co., 217 Main street, Galesburg, Ill. This new illustrated monthly magazine of orinthology deserves more than passing notice, both from promises concerning it and the magazine itself. The neat design of the front cover leads one to expect something worth while within. Each of the seven illustrations is well done, giving a good idea of the thing illustrated. Of the literary matter it is enough to mention such well known contributors as Mr. O. Widmann, Rev. P. B. Peabody, P. M. Silloway and others. The matter is well selected, and the typographical appearance unusually pleasing. As an illusrtated monthly magazine of ornithology it is easily among the best of its kind in the country. We hope that it will be one of the established magazines, supplying a long felt want, and constantly advancing the cause of popular scientific ornithology which has for its aim the preservation and study of our birds, not their extinction.

The Observer. Vol. VII. Nos. 8, 9 and 10. August, September, and October, 1896. No magazine is doing more than this one to eliminate the objectionable features connected with the science of orinthology, and to popularize the intelligent study of the birds. While its matter relating

to birds is popular, it is yet scientific in the sense that it is dealing with facts, not theory nor poetry.

As we go to press the second installment of Major Bendire's "Life Histories of North American Birds" is received. A review of this excellent work must be delayed until the succeeding issue.

WANTED! Clean, unbound back numbers of the *Auk*, and *Ornithologist and Oologist*. Will pay good cash prices for the right numbers.—HENRY R. BUCK, *Wethersfield, Conn.*

CENTRAL PARK
NEW YORK
OF NATURAL HISTORY

NOTES ON THE BIRDS OF OKANOGAN CO., WASHINGTON.

Family Tyrannidae, Tyrant Flycatchers.

This aristocratic family is represented in Okanogan county by nine species, of which four are *Empidonaces*. The consideration of the latter is reserved until, in some later Bulletin, they may be compared with some available eastern specimens. Of the remainder, *Tyrannus tyrannus*, the common Kingbird and *Tyrannus verticalis*, the "Arkansas" Kingbird, have too wide a range to require special notice here. However, may it be in order to note the manifest absurdity of calling *T. verticalis*, which is abundant in Washington, the "*Arkansas*" Kingbird. It cannot make even the feeble plea offered by the "Louisiana" Tanager, viz., that the name once included the region of the bird's greatest abundance. *Western* Kingbird would evidently be a more suitable, if not very original, name.

Say's Phœbe. *Sayornis saya*.—In the spring of '96 these birds appeared on the 17th of March and immediately took up their wonted stations as patrols on the granite cliffs. You may expect to find a pair of these pewits around almost any considerable rock-wall of the lower ranges. The bird will make its presence known by a sudden shrill, "*Look at 'ere, look at e-ere*," as it flushes and seeks a higher point of rocks. If pursued it will rise from rock to rock, alternately grumbling and coaxing, but keeping shrewdly out of reach of "dust" shot until you are successfully decoyed to the summit of the steep. Arrived there the bird disappears from view by a bold plunge over the brow of the cliff, and soon you hear, wafted up to you the faint, plaintive notes from some boulder hundreds of feet below, where the bird sits waiting to "begin again." On March 19th a Say's Phœbe was seen on the townsite of Chelan, fluttering about with his mournful burden from fence to gable and back again. His common note is a minor "*Kutew, kute-e-ew*," with various inflections, sometimes falling, sometimes sharply interrogatory. A rapid succession of these liquid notes delivered while the bird is on the wing passes for quite a respectable song.

Olive-sided Flycatcher. *Contopus borealis*.—Not a common resident even in the higher ranges where it is found, but conspicious on ac-

count of its clear penetrating note, "*Sweechew*," delivered with great energy from a high branch in some fir tree. The bird chooses its summer quarters in the depths of the mountains up to the very feet of the glaciers. Here the miners and prospectors love its heartening cry, which they hear as "*Three cheers!*"

Western Wood Pewee. *Contopus richardsonii*. — This bird is perhaps the most characteristic species of the fir-clad, precipitous shores of Lake Chelan. Structurally it closely resembles the common Wood Pewee, (*C. virens*) of the East so that the distinctions between birds in the hand are very nice. The olivaceous of *virens* is almost subdued in *richardsonii* and this is especially noticeable on the breast, where the olive is entirely replaced by fuscous. In the specimens at hand (two of *C. richardsonii* and three of *C. virens*) the under mandible of the western bird is largely dusky, as against the yellow with merely dusky tip of *virens*.

But habits, and particularly notes, at once set the western representatives still further apart. The note of *richardsonii*, is not only "not exactly like that of *virens*" (Coues), but radically different. It is a unique blending of poignant melancholy and fitful exultation, which defies analysis. "A weird *sweer*," as given thus in quotation marks by Coues* perhaps expresses it as nearly as one can hope to. "Weird" it certainly is, and calculated to prepare you for the mysteries of the great dark mountains, as you draw up along shore and are saluted by one of these little mourners. The vivacious manners of the bird however, compromise the impression produced by its doleful tones. And so when one of them has returned from a successful brush with a hated rival or, as one may imagine, has shared some Contopine jest, his little being fairly overflows with such a tumult of braggadocio or shrill laughter that one fears for his sanity.

The breeding range so far as observed is confined to the lake shore, where the birds choose some exposed situation and set a dainty hempen cup at the fork, or foot, of a bare limb, without invoking the aid of any covering leaves. A nest found on August 1st, 1895, which contained two large young, was saddled upon the crotch of a maple sapling which leaned out from the cliff at an acute angle and at a height of fifteen feet above the water. There was no attempt at concealment as the sapling was destitute of leaves for several feet on each side of the nest. Other situations chosen were clumps of osiers or dead elderberry bushes.

The bird is perfectly guileless in its domestic affairs and indeed seems

*Key N. Am. Birds ed. 1887—but there wrongly attributed to Wright's Flycatcher.

rather proud to show off its nest to interested and flattering strangers. A typical nest thus pointed out by an over-obliging bird was saddled neatly on a horizontal limb of a balm tree at the height of about 30 feet from the ground and the ever-present lake. Since it was found on June 12th, (1896) this nest contained three fresh eggs. It made an easily marked prominence on the two-inch limb which supported it, and measured, inside, 1½ inches deep by 2 inches wide ; outside 2 inches deep by 3 inches wide. It was composed of dried grasses, vegetable fibres and the familiar gray hemp. A few feathers and bits of cotton from the old catkins of the balm tree were worked in ; but there was no apparent difference in the texture between the inside and the outside and no attempt at external ornamentation or concealment. Hence quite different, it will readily be seen, from the shallow, lichen-colored nest of the common Wood Pewee. The eggs are not distinguishable from those of *C. virens*.

William L. Dawson, *Oberlin, O.*

GENERAL NOTES.

Notes from Berwyn, Penn.—Increasing Species.—With the evidence at hand of the decrease in numbers and the not infrequent disappearance entirely of many of our birds in various localities, it has been a good deal of pleasure to me to note a more or less marked increase in numbers of a few of our local species during the past season. The Red-headed Woodpecker, *Melanerpes erythrocephalus*, the first to attract the attention and admiration of him who was destined to be known as the Father of American Ornithology, is far from common. It has been observed oftener during the present year than for a period of the six years preceding. Several were found wintering with us, and several broods of young were raised, to my knowledge. It became quite a common occurrence to note several of the beautiful Scarlet Tanagers, *Piranga erythromelas*, in a few minutes' walk during the May migrations, while the average number of individuals in former years was very few. The increase became preceptible last year to a less degree, when it was first found nesting. This season, its unobtrusive "*chick-chur*" became a familiar sound, issuing from almost every suitable thicket of saplings and wild grape vines. Up to June 2, of the present year, I was practically unacquainted with the Purple Martin, *Progne subis*. Whether it be through the breaking up of a colony or the surplus of an over crowded neighborhood, we are the gainers of perhaps more than a half-dozen

pairs of this wholly beneficial species, all of whom succeeded in rearing their young, thus increasing several fold. While a decade may pass before the Bluebird, *Sialia sialis*, becomes as abundant as it was before the great blizzard of February, 1895, pairs and small flocks may commonly be seen, where it was unusual to find a solitary individual or pair, the previous year. The rapidity with which this species is recovering from the almost annihilation occasioned by the great storm at their winter home, is gratifying indeed. To the above list I would add the Belted Kingfisher, *Ceryle alcyon;* Blue Jay, *Cyanocitta cristata;* Baltimore Oriole, *Icterus galbula;* Cardinal, *Cardinalis cardinalis;* and most of our breeding Warblers. All being bright plumaged birds, I am almost persuaded to believe that cruel fashion has become less importune in her demands upon Nature for adornment of this class. That this relic of barbarism has not yet become obsolete I have recently had ample proof, for *seven* Hummingbirds were counted on the hat of a lady examining my collection, the display fairly rivalling the case of mounted birds she was viewing. FRANK L. BURNS, *Berwyn, Pa.*

THE BREEDING OF WARBLING AND YELLOW-THROATED VIREOS.—WARBLING VIREO.—On the morning of May 31, 1893, I noticed a Warbling Vireo taking cotton from a bunch which I am in the habit of keeping in a tree by my window. The nest was soon found, about half finished, in an apple tree, near the end of a lower limb and about ten feet from the ground. The tree stood in a row by a little used drive-way, 100 yards from the bird's "cotton mine." After watching the nest for some time I found that the female took, on an average, one minute for the round trip after cotton, and another to put it in the nest. The male did not work, but kept near his mate and sang almost constantly. On June 3, in the afternoon, there were two eggs in the nest, so the first was probably laid the day before—June 2. June 5, 7:15 A. M., there were three eggs, and the bird was on, probably laying the fourth, as she left the nest with great reluctance. June 10 and 17 sitting, but on the 25th the four young were out and not less than four days old. The pinfeathers on the spinal tract were 1-16 inch long. This would make the period of incubation fifteen days if the bird began to sit immediately after laying the last egg, and if my estimate of the age of the chicks was correct. I had to be away for a week at this time, and on July 5, I took the deserted nest. It was quite lousy. The materials used were few —a frame of cedar bark strips, filled ¼ inch thick with cotton and lined very thinly with a few dry grass stems.

YELLOW-THROATED VIREO.—The nest was found on May 31, 1893, by looking in the tree where I had found nests in 1891 and 1892. This nest was not two feet from the 1892 site. It was about twenty feet up in a large sugar maple by the road side, and overhanging a barnyard. Some cedar bean poles in a garden across the way had supplied bark for the body of the nest, and the "ornaments" were, as always, green moss and plenty of white spider's egg cases, picked from tree trunks and the nearest fences. The nest contained at the time three eggs, and the birds objected strongly to my handling them. On June 5, the bird was sitting, and again on the 10th and 11th. They are very reluctant to leave the nest, more and more so, I think, as time passes. I have twice touched a female with my fingers before she would leave a nest of freshly hatched young; this in the pleasantest of June weather too! On June 17, the young were out—four or five days old, having pin-feathers on the back 1-16 inch long. Supposing them to have been four days old, this makes the period of incubation twelve days. Such "estimates" as this are always unsatisfactory, but may serve to emphasize the need of more industrious field work in such matters. HENRY R. BUCK, *Wethersfield, Conn.*

HENSLOW'S SPARROW, *Ammodramus henslowii*.—I secured an adult female one mile south of Berwyn on October 23, 1896, under somewhat peculiar circumstances. A large black and white cat was seen along the fence of a pasture field, with something in her mouth. Through coaxing I rescued the yet living bird from her jaws, without injury to the feathers. It proved to be an old bird in excellent plumage, with the exception of the primaries and secondaries, which were scarcely three-fourths grown. This, together with its extreme fatness, rendered it an easy victim to tabby. Its stomach was filled with a species of wingless *Diptera*. This is my first personal record of this bird in the state, although I have found it along the coast of New Jersey, where it is less uncommon.

FRANK L. BURNS, *Berwyn, Pa.*

LATE DATE FOR PRAIRIE WARBLER, *Dendroica discolor*.—A single individual of this species was observed feeding in a pasture field, and on the bank above a road-side on October 24th, '96, an unusually late date. I succeeded in approaching within four feet and examining it for fully half a minute before it took alarm and flew to a young tree, where it was joined by another of its kind. FRANK L. BURNS, *Berwyn Pa.*

Rare Oberlin Records. — Yellow-headed Blackbird, *Xanthocephalus xanthocephalus*.—On October 9, 1896, the writer was greatly surprised and delighted to see passing directly overhead, scarcely as high as the shade trees, five birds which were unmistakably Yellow-headed Blackbirds. Another company of about the same number was just vanishing in the distance, to which these five seemed to be calling. They were probably of this species, judging from their action and manner of flight. The occurrence was purely accidental.

Blue Goose. *Chen cærulescens*.—The capture of two male specimens of the Blue Goose on the village water-works pond, on October 28, adds one more species to the county list, and one more record of this comparatively rare species. These two birds were evidently young of the year, and were not at all wild. While not fat, they were in good flesh. One was lame in one foot, apparently having been hit by a shot.

Lynds Jones, *Oberlin, Ohio*.

Notes on the Warblers of Western Oregon.—Audubon's Warbler, *Dendroica auduboni*.—Is found here at all times of the year. I have seen a flock of thirty or more in mid-winter, but the great flight passes north in April, a few remaining to breed. May 23 I saw a female carrying food to her young. The nest was placed in a fir tree more than fifty feet from the ground, and I did not care to climb to it.

Black-throated Gray Warbler, *Dendroica nigrescens*.—This is a common warbler here. First seen April 16, and April 29 heard singing, when it became common. It is a common breeder here, but I have looked in vain for the nest, which is placed in fir trees.

Townsend's Warbler, *Dendroica townsendi*.—Is one of the rarest warblers found, and was first seen this year on April 22, and one was taken from a small flock in 1895. May 17, I saw many of these warblers in the mountains east of here; they were singing, and I have no doubt that they breed there.

Macgillivray's Warbler, *Geothlypis macgillivrayi*.—This is one of the most common warblers breeding here. First seen May 2. They are found breeding in mountains and valleys, though not nesting on the ground. They prefer low thickets and pastures, and the nest is not so hard to find as some of the other warblers.

Pileolated Warbler, *Sylvania pusilla pileolata*.—This is a rather common warbler; first seen May 11, when it became common. It does not breed here in the valley, but on the coast I found it breeding, but too late to get the eggs. Nests were on the ground or near it.

LUTESCENT WARBLER, *Helminthophila celata lutescens*.—First seen April 2, when it became common. It breeds here. I have found one nest, which was placed on the ground and contained four young. The nest was composed of dry leaves and grass and lined with horse hair.

YELLOW WARBLER, *Dendroica æstiva*.—This is not a common warbler. First seen May 8. It is more domestic in its habits than the other warblers. I have not yet found a nest, though it breeds here.

WESTERN YELLOW-THROAT, *Geothlypis trichas occidentalis*.—This is a common warbler in low ground. First seen April 4, but did not become numerous until April 12. Habits and song like eastern bird. I have not yet found the nest.

HERMIT WARBLER, *Dendroica occidentalis*.—Is said to occur here, but I have never found it in three years of collecting.

GEORGE D. PECK, *Salem, Oregon*.

INFORMATION WANTED.

A monograph of the Flicker, *Colaptes auratus*, could scarcely lay any claims toward completeness without a more or less full list of the various local names or "vernacular synonyms" as they have been termed. No American bird can approach our subject in the number and variety of its nicknames. Already the number recorded is large, and, no doubt, as many more are in use locally or throughout extensive sections of this broad land of ours, of which no record has ever been made.

It is our purpose to make the list as full as possible, and in whatever language or dialect the name may be, it would be gladly received as an addition to the general knowledge of the subject.

Any information or suggestions relating to the meaning or probable origin of the following names will be gratefully received: *Cave-duc* (Maine), *Fiddler* (Cape Cod, Mass.), *Harry-wicket* or *Hairy-wicket* (New England), *Hivel* (New York, Ohio), *Hittock* or *Hittucks* (Canada), *Ome-tuc* (Maine), *Talpa-na-ni*, Seminole (Southern Florida), *Will Crisson* (South), *Wood-quoi* (Conn.), *Yacker* and *Yucker* (New York), *Zebec* (locality unknown).

Anyone who has heard of this species being designated by such names as *Rainfowl*, *Woodpie*, *Woodnacker*, *Wild Guinea*, or appellations of like nature, would confer a favor by communicating with the undersigned.

All who have promised data or desire to contribute to the Flicker Bulletin, are requested to send in their notes as early as possible.

FRANK L. BURNS, *Berwyn, Penn.*

EDITORIAL.

PINE SISKIN.—There seems to have been a decided movement of Pine Siskins southward during the early weeks of the fall. They were found to be not uncommon as far south as central Missouri during late September and early October. Mr. B. T. Gault records a company of some 200 of this species near Glen Ellyn, Ill., September 26. The first were noticed at Oberlin on the same date, and individuals were seen nearly every day until November 16, when the last were recorded. It would be interesting to learn just how extensive this movement has been. Will all members who have noted the Siskins this fall kindly drop the editor a card, stating date of occurrence, numbers, etc.

It is with keen regret that we note the suspension of *The Observer*, and the misfortune of the Editor, Mr. E. F. Bigelow. Not only will the Agassiz Association be deprived of its official organ and its means of inter-communication, but the reading public will also feel an unsupplied want when this excellent periodical no longer appears. We hope and trust that the suspension will be but temporary.

A comparison of the second edition of the Check List of the A. O. U. with the first impresses one with the fact that there is a wide field for investigation in determining the exact geographical distribution of a long list of species of birds. An organization like our own, with its widely scattered membership and co-operative methods, is in a position to do much toward solving many of these perplexing questions. Mr. Truman R. Taylor, 200 N. Union St., Rochester, N. Y., has consented to take charge of a committee on *Geographical Distribution of Species*. Mr. Taylor has been for some time with Prof. Henry A. Ward, and is well qualified to do this work. He should have the enthusiastic support of every member.

PUBLICATIONS RECEIVED.

Life Histories of North American Birds, by Major Charles E. Bendire. This, the second volume of Maj. Bendire's excellent *Life Histories*, which are issued by the U. S. National Museum as Special Bulletins, "intended to illustrate the collections belonging to, or placed in charge of the Smithsonian Institute," shows the same painstaking care and discrimination in the selection of notes from many different sources, and the same

conscientious attention to details, which characterizes the first volume.

The second volume begins with the well known but now nearly extinct Carolina Paraquet and ends with the Boat-tailed Grackle, thus comprising the orders Psittaci, Coccyges, Pici, Macrochires, and the families Tyrannidæ, Alaudidæ, Corvidæ, Sturnidæ and Icteridæ of the Passerine birds. The first volume treated of the Gallinæ, Columbæ and Raptores. The present volume is hence some hundred pages larger than the first volume. In execution it is, if anything, superior to the first volume.

The descriptions of eggs are supplemented by seven lithographic plates on which are 201 excellent figures of eggs, all natural size. These alone make a volume of inestimable value to the working ornithologist, and when supplemented as they are, by detailed accounts of habits and haunts and the description of notes and song, form a basis for intelligent field study of characteristics of the birds which it would be impossible for a work of this sort to touch upon. We congratulate Maj. Bendire on the success of his great work, and we congratulate ourselves in having this illustration of the possibilities of aiding our fellow workers in science.

The Osprey. November, 1896. Vol. I, No. 3. The present number fully sustains its high character both in a scientific and literary sense, and in the excellence of the illustrations. It seems certain of success.

Transactions of the Texas Academy of Science. Vol. I, No. 4, 1895. Contains the following valuable papers: The Law of Hypnotism, R. S. Hyer; County Roads, Charles Corner; The Soil of Texas, E. T. Dumble; Genesis of Certain Ore Veins, W. H, von Streeruwitz; Bio-geography of Texas; C. H. Tyler Townsend.

ELECTION OF OFFICERS.

An unofficial note from Mr. Fank L. Burns, Judge of Elections, announces the election of the following officers:

President.—R. M. Strong.

Vice-President.—Ned Hollister.

Secretary.—J. E. Dickinson.

Treasurer.—Lynds Jones.

Announcement of the members elected to the Executive Council is deferred, on account of a close vote between two members.

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WANTED! Clean, unbound back numbers of the *Auk*, and *Ornithologist and Oologist*. Will pay good cash prices for the right numbers.—Henry R. Buck, *Wethersfield, Conn.*

BULLETIN No. 4.

WILSON ORNITHOLOGICAL CHAPTER.

WARBLER REPORT.

OBERLIN, OHIO.

JANUARY 15th, 1895.

Bulletin No. 5.

The Wilson Ornithological Chapter of the Agassiz Association.

THE

AMERICAN CROW,

(*CORVUS AMERICANUS.*)

With Special Reference to its Nest and Eggs.

BY

FRANK L. BURNS.

OBERLIN, OHIO.
March 15, 1895.

H. KENASTON'S PRINT, OBERLIN, O.

BULLETIN No. 6.

The Wilson Ornithological Chapter of the Agassiz Association.

Reports of Officers

FOR 1895.

With Preliminary Reports of Committees on Special Investigations.

OBERLIN, OHIO.
January 30, 1896.

BULLETIN No. 7.

The Wilson Ornithological Chapter of the Agassiz Association.

GENERAL NOTES.

Issued By=Monthly as the Official Organ of the Chapter.

EDITED BY LYNDS JONES.

OBERLIN, OHIO.
March 30, 1896

BULLETIN No. 8.

The Wilson Ornithological Chapter of the Agassiz Association.

GENERAL NOTES.

Issued Bi-Monthly as the Official Organ of the Chapter.

EDITED BY LYNDS JONES.

Subscription 50 cents a Year.

OBERLIN, OHIO.
May 30, 1896.

BULLETIN No. 9.

The Wilson Ornithological Chapter of the Agassiz Association.

GENERAL NOTES.

Issued Bi-Monthly as the Official Organ of the Chapter.

EDITED BY LYNDS JONES.

Subscription 50 cents a Year.

OBERLIN, OHIO.
July 30, 1896

BULLETIN No. 10.

The Wilson Ornithological Chapter of the Agassiz Association.

GENERAL NOTES.

Issued Bi-Monthly as the Official Organ of the Chapter.

EDITED BY LYNDS JONES.

Subscription 50 cents a Year.

OBERLIN, OHIO.
September 30, 1896.

BULLETIN No. 11.

The Wilson Ornithological Chapter of the Agassiz Association.

GENERAL NOTES.

Issued Bi-Monthly as the Official Organ of the Chapter.

EDITED BY LYNDS JONES.

Subscription 50 cents a Year.

OBERLIN, OHIO.
November 30, 1896.

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MARCH, 1890,
O. P. HAUGER & CO.,
ORLEANS, IND.

THE WILSON CHAPTER, A. A.

This society was organized Dec. 3, 1888, in order to bring ornithologists into closer relationship and to aid the progress made in our favorite study by turning to the best advantage all the observations made by our widely scattered membership.

This is being accomplished by reports made quarterly to the President of the Chapter, embracing the notes taken on all phases of bird life and especially on the Turush family concerning which, during the past season, a large amount of valuable and interesting material has been contributed by members.

We wish every member to report in full all the notes taken on bird life, for although many may seem unimportant, by their combination with those of a similar character, taken by other observers they will frequently form a valuable contribution to our ornithological knowledge.

All Oologists are especially requested to send to the President of the Chapter, an exact copy of the notes placed on the data blank, with any other interesting information.

Lists of the birds found in any locality, stating the seasons at which they are found, whether abundant, common, tolerably common, or rare, notes on breeding and general habits are needed. Many very excellent lists have been received during the past season.

All reports, lists, notes and information received will be tabulated and as far as possible, printed in the "Ornithologists' and Oologists' Semi-annual," our official organ.

As it is desirable to continue in the Semi-annual the "Ornithological and Oological Notes," we hope all rare captures and especially interesting observations will be reported promptly.

CONSTITUTION.

ARTICLE I. Name.

The Wilson Ornithological Chapter of the Agassiz Association.

ARTICLE II. Object.

The promotion of American Ornithology and Oology by systematic investigations and the publication of the results.

ARTICLE III. Membership.

Membership shall consist of Active and Associate members.

Active members only, can vote and hold office.

Any student of birds in the United States, may be admitted to Associate membership by the President.

Active members shall be limited in number by the Executive Council; provided that the number shall not exceed one hundred, or be limited to less than twenty-five, except by a majority vote of the Active members.

Active members shall pay annually, in advance, one dollar to the Secretary of the Chapter, for which amount he shall receive the official organ and all publications of the Chapter.

Active members may be admitted semi-annually, by a majority vote of the Active members, after a recommendation by the Executive Council.

Application for Active membership should be made to the Secretary.

Non-payment of dues for one year shall cancel their name from the roll of Active membership.

No dues shall be charged Associate members.

ARTICLE IV. Officers.

The officers shall be a President and a Secretary, to be elected annually.

The President shall have the general management of the Chapter, direct the investigations and prepare

the results for publication in such form as directed by the Executive Council and appoint all committees with the exception of the Executive Council.

The Secretary shall perform the customary duties of such an officer and prepare the necessary reports of the Chapter.

Article V. Executive Council.

The Executive Council shall consist of the President, who shall be chairman, ex officio, the Secretary and three other Active members elected annually.

The Council shall act upon all motions, petitions and plans not conflicting with this Constitution, and on matters referred to them elsewhere in this Constitution,

Article VI. State Divisions.

Organizations of all the members of the Chapter in any state may be perfected when ten members are enrolled from that state.

These Divisions may elect their own officers and make their by-laws, provided that the by-laws are are approved by the Executive Council.

The President of each Division shall, under the direction of the President of the Chapter, have charge of the investigations in that state.

Article VIII. Expulsions.

The Executive Council shall constitute a committee which shall have power to expell any member who is proved unworthy of membership.

The decision of the Executive Council can be overruled only by a two-thirds vote of the members in good standing.

Article IX. Amendments.

This Constitution may be amended at any time by a two-thirds vote of the members in good standing.

REPORTS.

We give the following as a convenient guide in reporting observations on those Thrushes and Warblers, found in your locality, which you have been able to study to a greater or less extent Notes may be reported on any, or all of the divisions indicated.

PLAN FOR OBSERVATION.

I. State. by using the abbreviations indicated, to which of the following five categories each species belong:

1. Permanent Resident, or found regulary throughout the year (R).

2. Winter Visitant, or occurs only during the Winter season, passing north in the Spring (W V).

3. Transient Visitant, or occurs only during the migrations in Spring and Fall (T V).

4. Summer Resident, or known to breed, but departs southward before Winter (S R).

5. Accidental Visitant, or straggler from a remote locality (A V).

Also indicate the relative abundance, as: Abundant, Common, Tolerably common, or Rare.

II. Migration. Note: When the species is first seen and number observed at this time. 2. When it is next seen. 3. When it becomes common. 4. When the bulk departs. 5. When the last individual is seen.

In the Spring Migration under 4 and 5 would be given the date when the Transient Visitants at

your place depart northward and in the Fall Migration should be noted, the date at which they arrive from the North and at which they go South.

III. Habitat: Are they found in forests, marshes, dry uplands, on borders of ponds or lakes, running streams or near dwellings? Can you give any reason for this choice of location?

IV. Habits: Explain all peculiar habits. Describe flight. When on the ground do they hop or run? Song: favorite time of day or night: influence of weather on its song, difference between song of male and female.

V. Nesting: Give full particulars of construction, position, height from the ground, locality, proximity to water, contents of nest, as eggs or young, exact date, incubation of eggs, identification and composition of each nest found during the year. Descriptions of sets, giving in addition to particulars concerning nest and surroundings, the size and coloration of each egg are especially desirable. Describe peculiar situations of nests. Do the eggs laid late in the season differ in size, color or number from those laid later?

VI. Number of broods raised by one pair of birds in one season, giving full particulars. If possible give the length of time required before the eggs are hatched from the time they were laid and the length of time each brood is cared for by the parent birds.

VII. Relations with Cow-bird (Molothrus ater). Are any of these species imposed upon by the Cow-bird? Give particulars, date, etc.

VIII. Natural Enemies: Enumerate the birds, mammals or reptiles which have been known to disturb or attack any of these species. Give all methods and artifices used by the birds for their protection from enemies or storms.

IX. Synonyms: Enumerate all common names applied in your locality, to these birds.

Observers are to report quarterly. First report due April 1, should contain your notes on Sections I. and IX., and any notes taken in preceeding years, concerning any habits.

Second report due July 1, should be on Spring Migration and Sections II., III., V, and VIII.

Third report due Oct. 1. will finish Sections III., IV., V., VI., VII. and VIII.

Fourth report will be on Fall Migration, Section II. and any further notes on Sections III., IV., VIII. or IX.

Any questions concerning above or the identification of specimens will be answered by the President of the Chapter.

LIST OF MEMBERS, MARCH 1890.

PRESIDENT, J. B. Richards, Fall River, Mass.
SECRETARY, Lynds Jones, Grinnell, Iowa.

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W. S. Smith, Lawrence, Kan.
J. H. Brown, Grinnell, Iowa.
H. C. Campbell, Lansingburgh, N. Y.
Herbert E. Hershey, Nebraska City, Neb.

ANNUAL ELECTION.

The election of officers for the season of 1890, took place during November last, and resulted in the election of the officers of the preceeding year, J. B. Richards, President, and Lynds Jones, Secretary.

GENERAL COMMITTEES

The report of the work accomplished by the Melological Committee, under the direction of Mr. S. Willard Bridgham, occupied six pages of the January 1890, issue of the O. AND O. SEMI-ANNUAL. This report contained interesting and instructive matter relating to the song of the Blue Yellow-backed, or Parula Warbler (Compsothlypis americana), Towhee (Pipilo erythrophthalmus), Pine-woods Sparrow (Peucæa æstivalis), American Goldfinch (Spinus tristis), Wood Pewee (Contopus virens), Kingbird (Tyrannus tyrannus), Blue Jay (Cyanocitta cristata), Chickadee (Parus atricapillus), and several others.

This Committee has done excellent work, during its six months existence. More observers are needed to carry on successfully, the study of bird songs and we hope all members who can do so will aid Chairman Bridgham in his work, by sending their name to the President of the Chapter and to Mr. Bridgham.

We reprint, from the O. AND O. SEMI-ANNUAL, the closing of Mr. Bridgham's report.

"The notes of birds vary greatly at different seasons and under different circumstances.

For example; of the seven varieties of the Jay's call, two seem to be used for a reason very similar to that which prompts a boy to whistle [and with about the same success as far as music is concerned]; two seem to be caressing and colloquial in character; one is a note of warning; one seems to express alarm merely, and the other seems to call others to the

neighborhood of the bird uttering it.

It is desirable to know if the notes of the sexes are the same or not, whether the cries they utter are the same vowel or syllable, with only a difference as to time and inflection of voice, or a different vowel or syllable.

We are also endeavoring to learn if there is any similarity between the calls of different birds under the same circumstances, and how much one species understands the calls of another species. The note of a Jay or Crow, for example, will put many other birds to flight, which take no notice of the ordinary calls of those birds, showing a knowledge of the meaning of the alarm note.

It has long been known that if one imitates the cry of a bird in pain, it will bring many members of the feathery tribe within eyeshot, and if, as we stated in another part of this report, the call of the Chickadee be imitated it will have various effects, according to the season of the year, as there explained.

There are so many points to notice and so much to observe, that for the sake of similarity and unity of effort in studying bird-songs, we have prepared and to a certain extent already adopted with good results a set of comparisons and suggestions to be followed as far as possible by our observers. This list of comparisons and suggestions will be forwarded most willingly to all who are willing to help by taking observations. Of course, notes on subjects not included in these lists are very desirable, but if our members will work on these suggestions we hope to

get something next year in a tangible form, from which to deduce conclusions.

To imitate and describe the note of a bird requires great skill, a delicate ear and a good memory, and therefore many are apt to give it up after a few trials.

Any attempt is a great help and as the same difficulty confronts nearly all, the data received will be peculiarly fit for comparison, and moreover a little trial and experience will greatly improve both the power of discrimination and description.

Therefore, we earnestly hope that all those interested in ornithology will aid in our first attempt at studying bird-songs, by contributing whatever data may come under their notice."

NOTE—The foregoing article is reprinted from the ORNITHOLOGISTS' AND OOLOGISTS' SEMI-ANNUAL, with the kind permission of the publisher, Mr. W. H. Foote.

A WORD TO THE MEMBERS

OF THE

WILSON ORNITHOLOGICAL CHAPTER, A. A.

THE O.&O. SEMI-ANNUAL is now the official organ of this society and in every number a department is set aside devoted exclusively to the interests of the members.

If you are an earnest worker you will not be without a number. There can be no real interest in being a member if you do not know what is going on and what the society is doing.

If you have not procured a copy of the Jan. '90 number you should do so at once. Illustrated. Fifty pages. Full-page colored frontispiece.

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W. H. FOOTE, PUBLISHER,

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NORTH AMERICAN BIRDS.

INTRODUCTION BY J. PARKER NORRIS.

ILLUSTRATIONS BY

THEODORE JASPER, A. M, M. D.,

AND W. OTTO EMERSON,

This work, which has now become the standard on the subject, is descriptive of the nests and eggs and characteristic habits of the Land and Water birds of North America. This includes the species that occur or are indigenous north of the Southern U. S. boundary, including Greenland and the peninsula of Lower California.

The arrangement of the work is according to the nomenclature of the A. O. U. Code and Check List, and the old number (Ridgway's) are placed to the right of each species. Concise outline habitats of each species and their breeding ranges are designated

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